Bay Area's Computer Magazine

NOV. 27, 1989 • #63

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Warren's Farewell To The Faire:
"Last year's Computer Faire was a stark and depressing contrast to the ecstatic chaos of multitudinous micros and massive mobs of the first eight Faires."

PAGE 40

Lessons From The Quake:
"People who use their micros every day and lost their electricity for awhile are starting to understand the advantages of having a backup portable computer."

PAGE 44

Getting The Most From Your LaserJet II

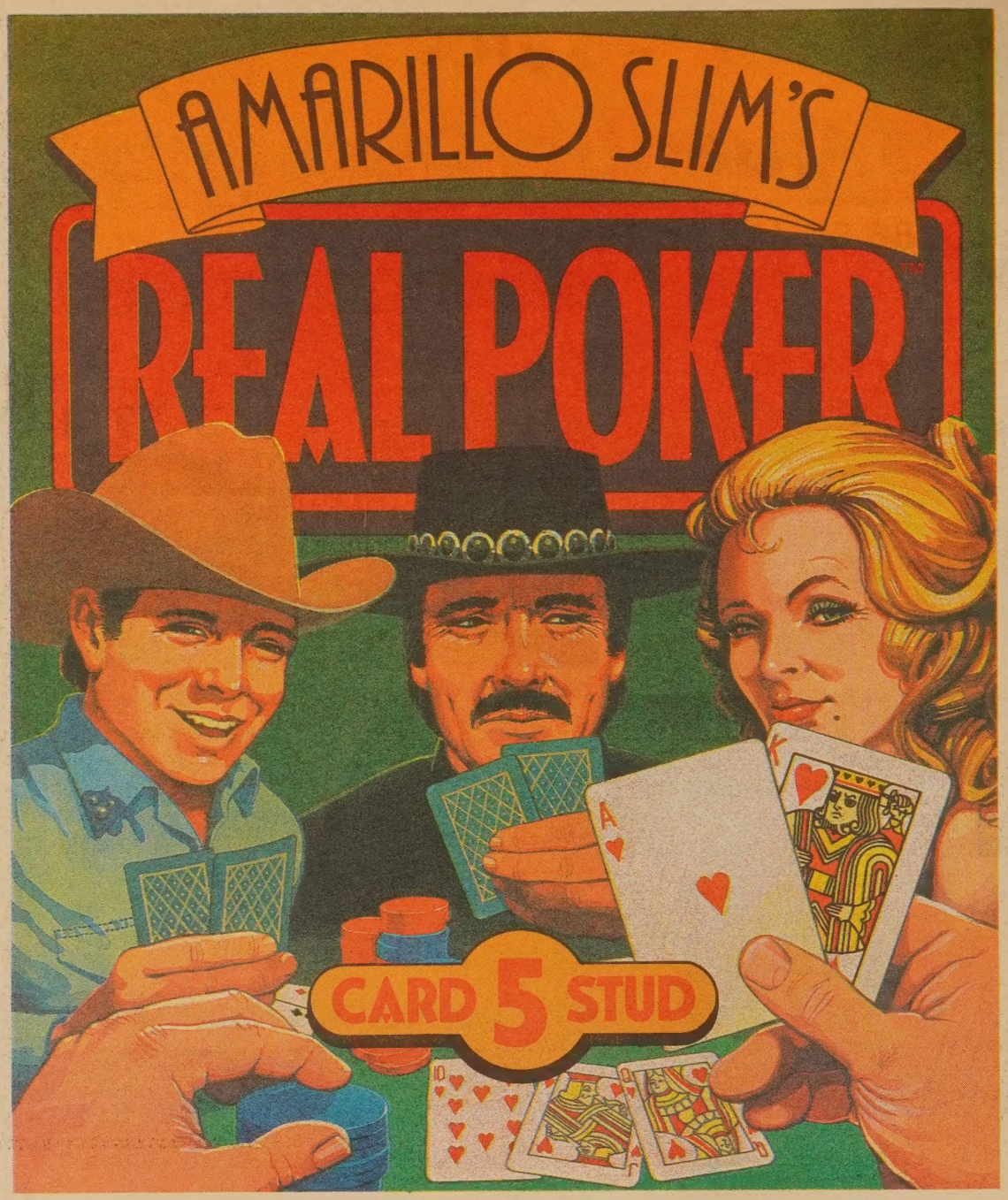
More Capacity For Your Hard Disk

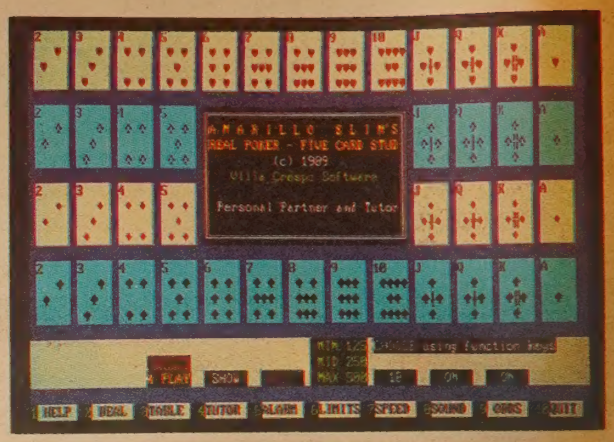
Moving To The Graphic Interface With Microsoft Word 5.0

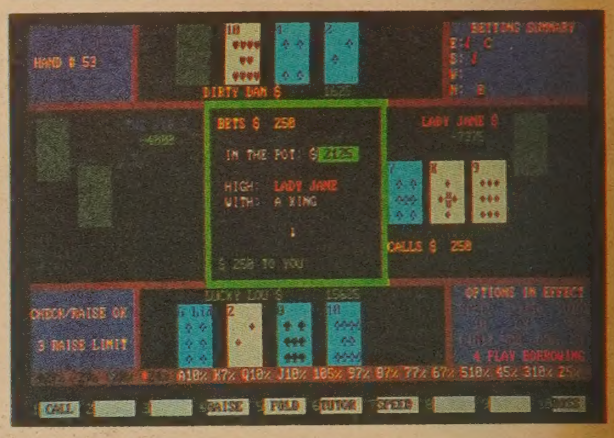
Dvorak Plugs His Book:
"One publisher told me she thought modems were dead. 'Nobody uses them any more.' In fact, this was the general impression in publishing companies that still rely on typewriters."

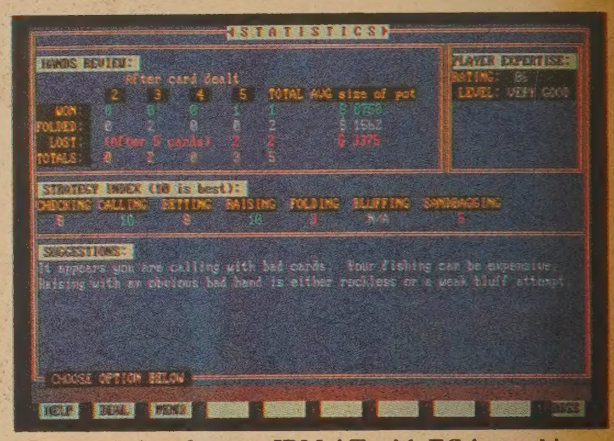
PAGE 226

YOU ARE INVITED TO PLAY...









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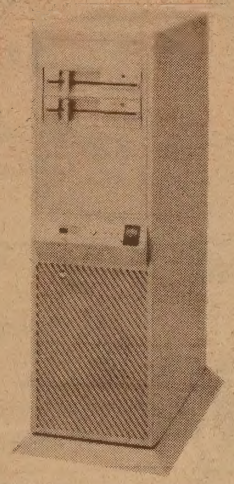

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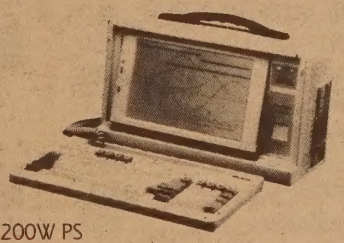

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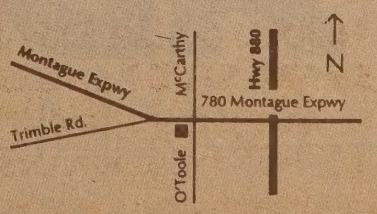

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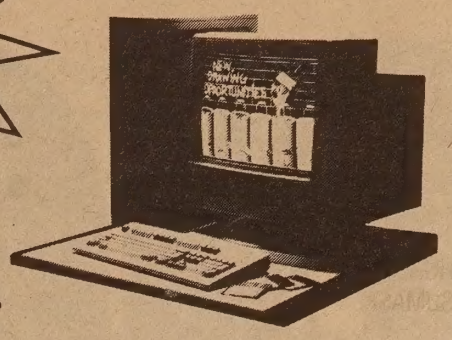

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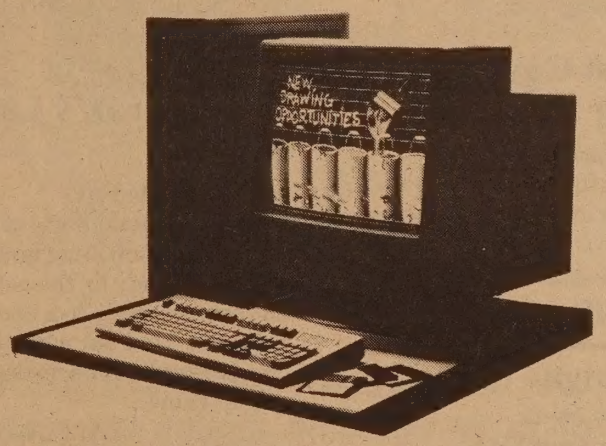

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By Woody Liswood

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Yes, it's that time again. We're preparing our annual list of people who made significant contributions to the microcomputer industry during 1989, and we need your help. So please let us know who you think deserves recognition, and you may win one of ten free subscriptions to *MicroTimes*! Hurry—we must receive your information by December 1.

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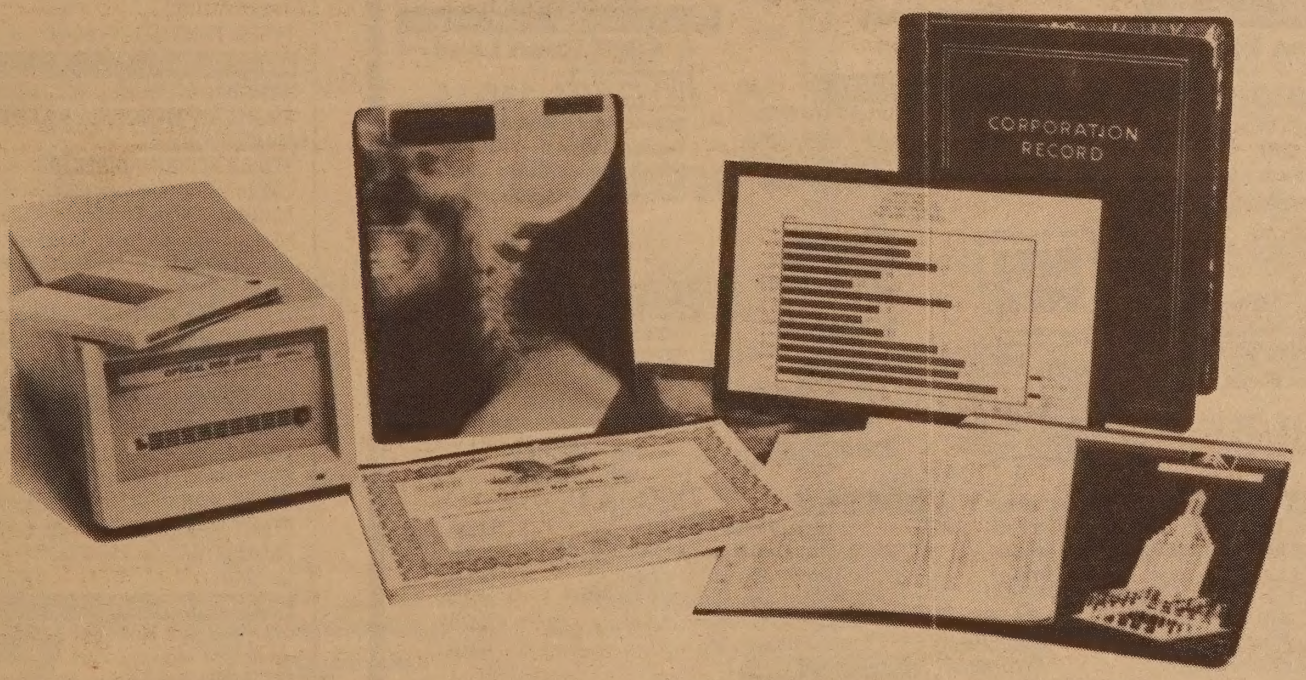

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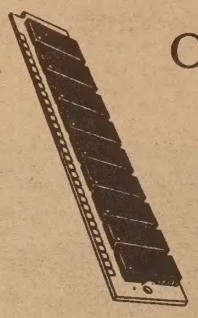

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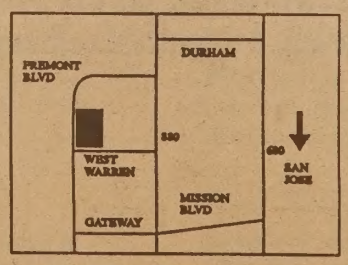

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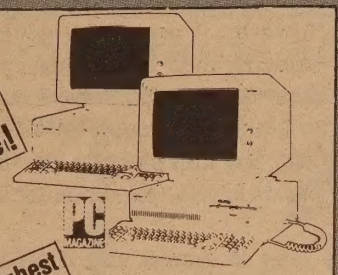

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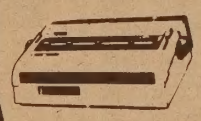

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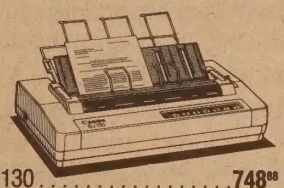

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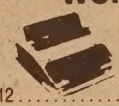

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LETTERS

And Now A Word From The Other 68000s

I am writing in response to the article by Mike Markowitz (Issue #61) entitled "Advice For The First-Time Buyer." While most of the article was well thought-out, and good advice, there was some inaccurate information I would like to address, and an erroneous impression I would like to clear up. And most importantly, an invitation to make.

The inaccuracies have to do with the sections on the Amiga and the Atari. Mr. Markowitz's assertion that "the selection of non-game software is rather limited" is just not true. The fact is, both the Amiga and the Atari have all the software most users will ever need. (Although I'm not as informed about the Atari, the Amiga alone has around 2000 software titles and hundreds of hardware add-ons.)

I currently am writing a book using my Amiga. I also use it to handle finances for the small business I run, and to compose and perform music. (I have an extensive MIDI music studio.) I also have used my Amiga to design brochures and laser print them, to add titling and special effects to my home videos, to educate while entertaining my daughter with spelling and math, and even to play an occasional game or two. And I haven't even begun to tap the potential of what's available on the Amiga right now.

"Of all the computer owners I meet, it seems to me there is a higher rate of satisfaction, enthusiasm, and even pride among Amiga, Atari and Mac owners than any of the others. I've never heard the phrase, 'I'm an IBM enthusiast.'"

The impression I was left with after reading the sections on the Amiga and the Atari was something like, "It's too bad these powerful, cost-effective machines never caught on, so don't even bother with these limited game machines." However, this is simply not true. There are now over one million Amigas sold, with a solid and rapidly growing base of third-party software and hardware developers. It's not even a question of whether the Amiga will make it in the marketplace or not. It has made it. The Amiga is here. It's now a question of what share of the market will it eventually take, and how fast will it continue growing?

Another important consideration when choosing a computer is the Satisfaction Factor. Will you enjoy using it? Amiga, Atari, and Mac owners tend to love their computers. Of all the computer owners I meet, it seems to me there is a higher rate of satisfaction, enthusiasm, and even pride among Amiga, Atari and Mac owners than any of the others. I've never heard the phrase, "I'm an IBM enthusiast."

The point is this: if people are simply getting the job done with their computers, they've made a good purchase. However, if people are getting the job done, and enjoying their computers, maybe even turned on about using them, they've made a great purchase. So to support people in making an informed choice, it's important to let them know which computers have a reputation for being most loved.

You can refer to Amiga and Atari users as a "charmed circle" of "loyal fans" in a way that implies they are exceptions to the norm, or you can present the fact that they love their computers as an important factor not to be overlooked for the first-time buyer. Find out and tell people what makes them so loyal. For example, "Many creative people like the intuitive user interface of the Mac, but were turned off by the price. When they discovered they could get the same intuitive interface plus color for less money, they were delighted!"

Let people know that they don't have to pay Mac prices to get Mac performance. For the "mass market," the Amiga and Atari definitely offer superior hardware for less money, and software of comparable or better value which also usually costs less.

For the corporate market, the Amiga has grown to include a fine selection of word processing, spreadsheet, database, project management, financial management, CAD, desktop publishing and even artificial intelligence software. The Amiga has been *reliably* multitasking these applications for years, while other platforms are still waiting and/or making do with "switcher" type software to emulate it. The Amiga can be expanded to function as a corporate workstation. It is capable of running five different operating systems including Amiga DOS, PC/MS-DOS, Macintosh and UNIX.

The Amiga practically invented desktop multimedia, although Apple is just now beginning to talk about it as the future of computing. (Yesterday's technology tomorrow?) The Amiga has the best animation and graphic software on any PC, and at last it finally has some top-notch music software as well. What it's missing is Apple's big-buck market muscle.

I'm not writing this to be another flag-waver for the Amiga, but rather to point out that an opportunity is not being seized. In the same way that IBM became entrenched as the standard that nobody really liked but had to put up with, now the Mac is becoming entrenched as the high price you have to put up with to get a friendly machine. Most people know that the Mac is a great computer, and most of them think that it is overpriced. But they think they have to pay that much to get a computer that's powerful *and* easy to use—with a good software selection. In addition to the Mac's higher initial cost, software for the Mac usually costs more than comparable software for the other 68000 machines. So once you're on the Mac price-is-no-object bandwagon, you continue to pay a premium for software and add-ons.

You as a journalist have the opportunity to alter a condition rather than perpetuate it. You have the opportunity to support people in making choices

"In the same way that IBM became entrenched as the standard that nobody really liked but had to put up with, now the Mac is becoming entrenched as the high price you have to put up with to get a friendly machine."

based on their own values, needs, and budget, rather than making them think there's only two choices, IBM or Apple. Let people know there *are* viable choices (and research them a little better yourself).

Do you want to lock us into another standard, one of exorbitant prices, or open up the market to many wonderful, affordable choices? Would you like to encourage healthy competition for Apple, or eliminate it? Do you want to perpetuate Apple's inflated prices, or would you like to see them be more affordable? You have the opportunity to make a difference in the way the future of computing unfolds. I invite you to encourage and support the efforts of companies that offer more value for less money, rather than thwart them.

You of course have the right to simply report things the way they look to you, without any intention to improve the larger picture of computing. But why, unless you have stock in Apple or IBM, would you not want to make it better for all of us?

P.S. Thanks for being a pioneer in featuring a regular Amiga column in your magazine.

Ray Hix
Oakland

I am compelled to write to you regarding the news item "Apple Announces Future Multimedia Strategy." (Issue #61)

It makes me sad when I see statements like, "The IBM PC is already far ahead of the Macintosh in its ability to display and produce video images at a low cost." It's my observation that the Commodore Amiga has been displaying, producing and manipulating video images very easily and at a much lower cost for several years. With a base of over one million computers, users worldwide are already doing interactive video which is not difficult and does not require an "incredible amount of hardware."

For about $2,000, even the home model Amiga 500 can do interactive video and multimedia presentations—in color! in stereo! and while multitasking! I'd likely guess that you'd need at least double that amount to do the same thing on an IBM or Macintosh.

The bottom line is this: please give credit where credit is due. If the problem is that the PC industry

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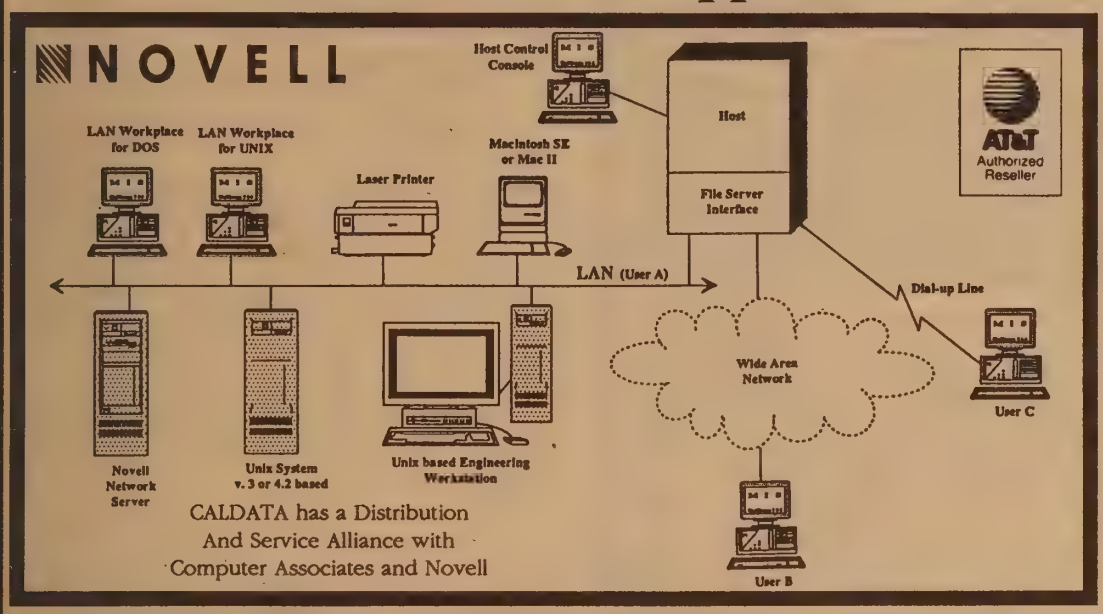

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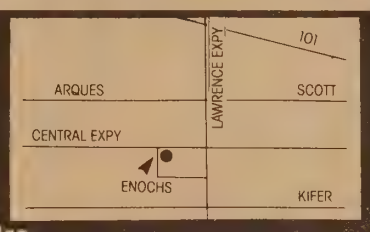

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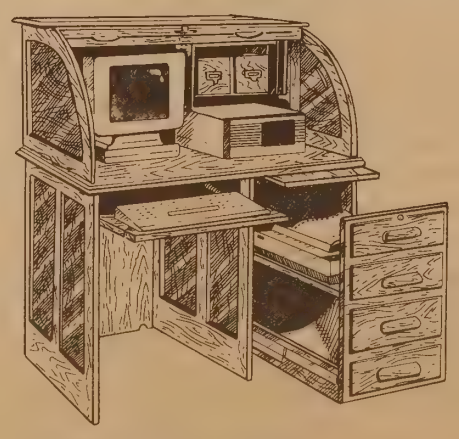

44" Computer Rolltop

editors are naive, maybe they better just go have a look—or better yet, call Commodore and apologize.

David R. Viets
Simi Valley

You should have known that giving only eight lines [in "Advice For The First-Time Buyer"] to describe the Atari ST would bring out Atari fans' ire.

The Atari ST has captured about 30% of the music market. There are over 40 programs written for music. Even the Pointer Sisters [*currently appearing in TV commercials for the Amiga—eds.*] and B. B. King use the Atari ST, and the soundtrack for *Colors* was done with an ST. A built-in MIDI port is responsible for this.

The Atari can be made MS-DOS compatible with the attachment of a disk drive, or Macintosh compatible with the attachment of a drive and a cartridge. There is even a CP/M and Atari eight-bit compatible kit. When it is Mac-compatible, it is even faster than the Mac with disk speed.

The Mega series offers the best package for desktop publishing, with about a dozen software titles and a low-cost laser printer. You can even run a LaserWriter by Apple.

I could write pages about the value of the ST. To use only eight lines shows a lack of research (or lack of interest).

John Pilge
Soquel

Reader In Dvorak's Retail Hell

I have been reading John Dvorak for several years now; often I have felt that I should write something but I never did. His column on retailers ("A Synopsis of Hate and Loathing," Issue 61N/62S), however, really hit the mark.

I, too, have been noticing the trend among retailers to treat their patrons like dirt, and like Mr. Dvorak am bothered by it. Many of the retailers I personally know seem to be oblivious to the fact that they are even treating their customers this way, and so when I suggest that they be nicer, the response is usually along the lines of: "I was holding myself in. You should have heard what I *really* wanted to say."

It is imperative that the owners of all businesses take a long look at their behavior to see if it could use some improvement. I am a firm believer in the theory that everything good or bad in a business comes from the top. I have never seen a group of employees successfully band together to turn around a company wallowing in the wake of its leadership. If there is going to be change, it must come from the leaders, not from the followers.

Greg Raven
via MacNET

Extreme? Dvorak?

Dvorak's reliance on polemics over reason has once again created a distorted rather than a true image. In this case he has oversimplified and failed to present a fair picture of the retail business.

There is a middle ground between the obsequious fawning of some service-oriented shops and the obnoxious abuse suffered at the hands of the worst peddlers. Some of us in retailing foster respect for our customer and expect the same in return. We gently educate the newcomer to the field and provide service within the expectations of a fair and reasonable individual. Rudeness is not tolerated on the part of our personnel, nor is it acceptable behavior from the customer. It should go without saying

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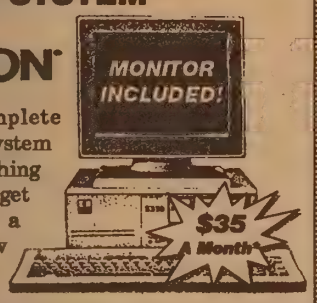

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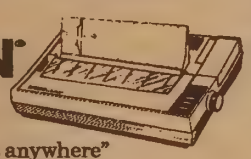

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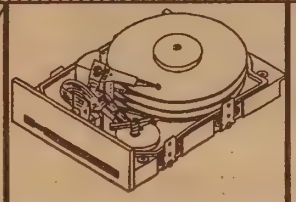

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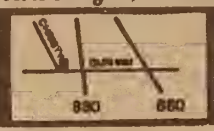

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that business, as in all human relationships, is a two-way street.

A successful business is based on a rational assessment of the customer's problems and the providing of valuable hardware and service. A customer cannot always be right, especially when he is determined to combine incompatible components or expects impossible performance. Our customers are generally grateful when they are plainly advised not to explore certain non-productive courses of action.

The pursuit of the Almighty Dollar can easily warp the perceptions of retail management. However, we think that some transactions with individuals or organizations proven to be unreasonable (and we all know who they are) are best left to the fast-buck artists or fools in search of hard lessons.

Dvorak seems to have less experience in retail than he pretends. Perhaps he is one of the common breed of know-it-alls that provide much humor in the lunch room. He may be someone to avoid.

Bill Copenhaven
Richmond

Correction

We'd like to blame this lapse on the earthquake, but that excuse is probably wearing a little thin...

In last month's issue we incorrectly stated that the Alliance Japan conference, which took place October 6 in San Francisco and discussed various aspects of US companies doing business in Japan, was sponsored by Creative Strategies Research International. In fact, the reality is more complex: the conference was sponsored by *Computerworld*, and organized by Data Control Ltd./DEFTA, Inc., Transphere International, and Creative Strategies Research International.

For more information on Alliance Japan '90, contact DEFTA, P.O. Box 51238, Palo Alto, CA 94303; (415)424-0940.

Our apologies to all concerned for the inconvenience caused by this error.

—eds.

We'd like to know what you think. Whether it's feedback on one of our articles, your views on industry issues, or a problem you'd like to bring to the attention of our readers, we want to hear from you. We invite letters to the editor via US Mail at 5951 Canning Street, Oakland, CA 94609, or via fax at (415)652-4618 or (213)467-5486. Please send electronic mail to ***microx*** *on the WELL (415)332-6106,* ***(pacbell, hplabs, ucbvax, apple)!well!microx*** *on uucp, and* ***MICROTIMES*** *ON MACNET.*

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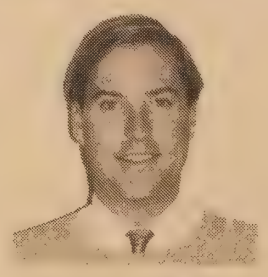

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November 28 Hardware Seminar. Berkeley. BMUG, Inc. Call: Betsy Kennedy, (415)549-2684.

November 28 Producing Your Newsletter Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

November 28–December 1 Expert Systems Design & Development: Hands-on Workshop. Los Angeles. Integrated Computer Systems. Call: 1-800-421-8166.

November 28–December 1 Real-time Structured Analysis & Design Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

November 28– December 1 Security For Computer And Communication Systems. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

November 28–December 1 Structured Analysis & Design Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

November 28 Automating Your Accounting System With Solomon—See What It Can Do For Your Business! San Francisco. J.C. Lukrich & Co. Call: Beth Markus, (415)864-6770.

November 28 Optical Character Recognition Seminar. Sunnyvale. M & P Computer & Communication Systems. Call: Donna, (408)738-8578.

November 28–30 Engineering Workstations Conference. Los Angeles. National Institute For Management Research. Call: (213)450-0500.

November 28–December 1 Computer Aided Design & Drafting—Level 1 Seminar. San Francisco. San Francisco State University. Call: (415)338-1205.

November 28 Export And Market Penetration Strategies For Japan Conference. San Francisco. UC Berkeley/Department of Commerce. Call: (408)988-0551.

November 29–December 1 Macintosh Business Conference & Exposition. Long Beach. Cambridge Marketing. Call: Nancy Thayer, (617)860-7127.

November 29 Xerox Ventura Publisher 2.0 Seminar. Sunnyvale. M & P Computer & Communication Systems. Call: Donna, (408)738-8578.

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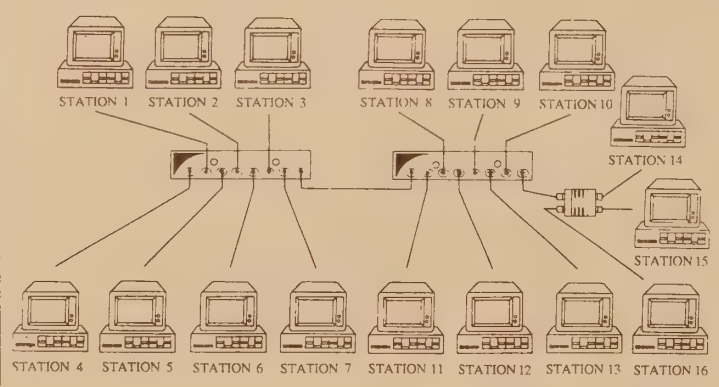

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November 30 SEF Meeting: Marketing SIG. Palo Alto. Software Entrepreneurs' Forum. Call: Don Morrison, (415)425-7222.

November 30 The Coming Of Worldnet Lecture. San Francisco. University of San Francisco. Call: (415)666-6530.

December 2–3 MacMusicFest 3.0. Los Angeles. Apple Computer/Macintosh Entertainment Guild Of America. Call: (213)468-5496.

December 2 LAN Basics: Network Installation & Configuration Class. Oakland. DATAssociates. Call: (415)465-9083.

December 2–3 AutoLISP Seminar. San Francisco. San Francisco State University. Call: (415)338-1205.

December 4 The State Of The Art Of Industrial Robots. Techmart, Santa Clara. Artificial Intelligence Special Interest Group. Call: Rita Zokaei, (415)574-8225.

December 4 Basic Macintosh Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 4 Graphic Tools For The Macintosh Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 4–5 Dataflex Class. San Jose. Goldcoast Software Systems. Call: (415)964-1500.

December 4–7 Basic System Administration Class. Berkeley. Lurnix. Call: 1-800-433-9338.

December 5 Basic Macintosh Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 5 DataFlex Programmer's Class. San Jose. Goldcoast Software Systems Inc. Call: (415)964-1500.

December 5–7 10th Real-time Systems Symposium. Santa Monica. IEEE Computer Society. Call: Al Mok, (512)471-9542.

December 5–8 Systems Engineering Course. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

December 5 How To Automate Your Business Accounting System Seminar. San Francisco. J.C. Lukrich & Co. Call: Beth Markus, (415)864-6770.

December 5–8 Sun User Group 1989 Conference. Anaheim. Sun Microsystems. Call: (415)336-4112.

December 6 PageMaker Part I Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

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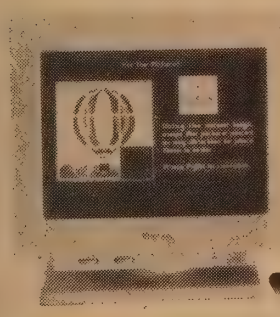

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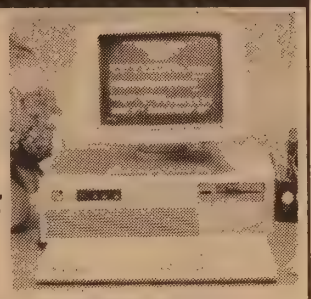

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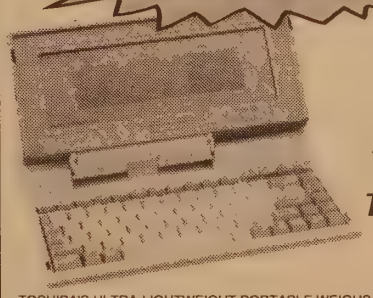

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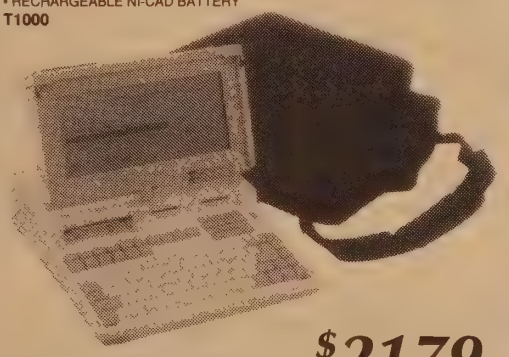

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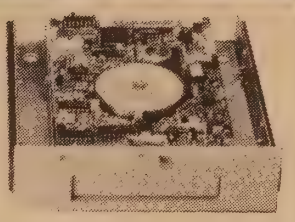

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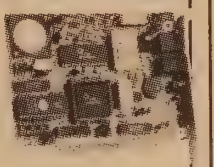

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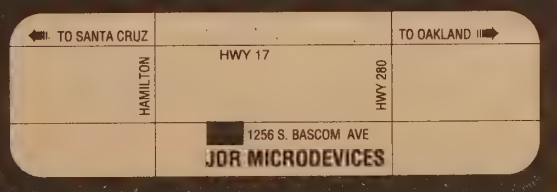

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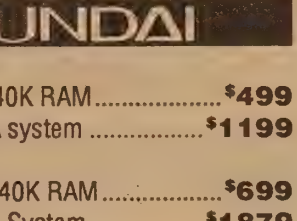

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December 7 Word Part I Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 7 SEF Meeting: Multimedia & HyperCard SIG. Los Altos Hill. Software Entrepreneurs' Forum. Call: David Gewirtz, (415)345-4620.

December 7–8 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

December 7 Microcomputer Applications For People With Physical Disabilities Lecture. San Francisco. University of San Francisco. Call: (415)666-6530.

December 9 Administration: Managing A Novell Network Class. Oakland. DATAssociates. Call: (415)465-9083.

December 9 Computer Mart. De Anza College. Call: (408)864-8581.

December 9 Basic Tax And Record Keeping Information For Self-Employed People Seminar. San Jose. Jan Zobel, E.A. Call: (408)924-2600.

December 11 Basic Macintosh Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 11–14 Power Utilities Intermediate UNIX Class. Berkeley. Lurnix. Call: 1-800-433-9338.

December 11–12 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

December 12 Basic Macintosh Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 12 Introduction To Adobe Illustrator Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 12 SEF Meeting: Macintosh SIG. Cupertino. Software Entrepreneurs' Forum. Call: Tony Meadow, (415)644-9400.

December 13 PageMaker Part II Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 14 HyperCard II Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 14 Word Part II Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 14 SEF Meeting: IBM Technical SIG. Santa Clara. Software Entrepreneurs' Forum. Call: Mike Schmit, (408)244-6826.

December 15 Graphic Tools For The Macintosh Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 15 Administration: Managing A Novell Network Class. Oakland. DATAssociates. Call: (415)465-9083.

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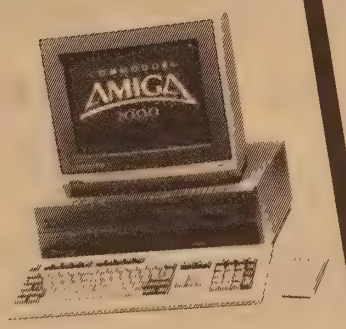

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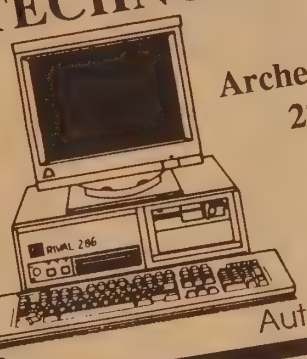

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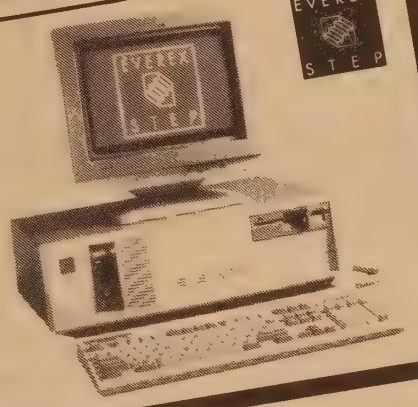

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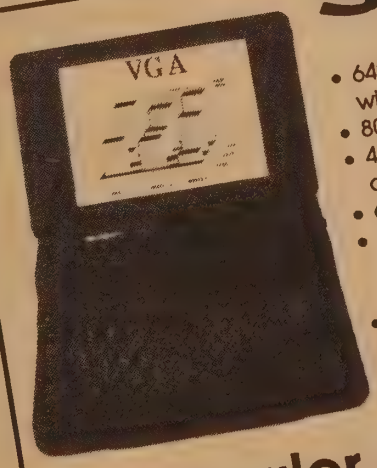

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386SX-16 MHz INTEL CHIP..... 359
386-20MHz VLSI CHIP SET..... 582
386-20 MHz MICRONICS COM.... 614
386-25 MHz C&T CHIP SETS..... 626

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Teac 720KB/1.44MB 3.5"..... 68/76
Fujitsu 360KB/1.2MB 5.25"..... 58/73
Fujitsu 720KB/1.44MB 3.5"..... 64/75

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Seagate 40MB (ST-251-1) 28ms.. 295
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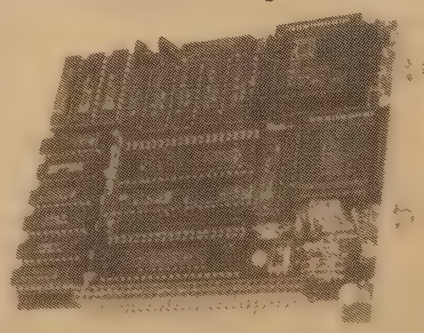

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CALENDAR OF EVENTS *continued*

December 16 PageMaker Part I Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 18 Intermediate Macintosh Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 18–20 Introduction To X-Windows Class. Berkeley. Lurnix. Call: 1-800-433-9338.

December 18–19 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

December 19 SEF Meeting: OOP SIG. Mountain View. Software Entrepreneurs' Forum. Call: Dean Ritz, (415)691-6727.

December 20 Basic Macintosh Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 20 Word Part I Class. Fort Mason Center. Computer Alliance. Call: (415)771-1671.

December 21 SEF Meeting: Micrographics, Windows, And OS/2. Palo Alto. Software Entrepreneurs' Forum. Call: Barbara Cass, (415)854-7219.

January 5 I-CUE Meeting: The Visual Almanac. Menlo Park. Computer-Using Educators. Call: Bob Enenstein, (415)969-4679.

January 6 De Anza College Computer Mart. De Anza College. Call: (408)864-8581.

January 11–12 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

January 18 EB CUE Meeting: Hypermedia. Berkeley. Computer-Using Educators. Call: Melissa Alden, (415)547-3763.

January 18-19 Second Annual Conference On Software Support. Burlingame. Institute For International Research. Call: (415)347-5444.

January 18–19 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

January 22–23 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

January 22–26 Winter 1990 USENIX Technical Conference. Washington, DC. USENIX: The Professional And Technical UNIX Association. Call: (714)588-8649.

January 23–25 International Conference On Wafer Scale Integration. San Francisco. IEEE Computer Society. Call: Joe E. Brewer, (301)765-1247.

January 23–26 Effective Skills For Technical Managers Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

January 24–26 Strategic Planning Course. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

January 25–26 The MacUser Marketing Conference. Burlingame. MacUser Magazine. Call: 1-800-234-6434.

continued

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286-16 MHz System	739	759	869	1041	1146	1221	1429
286-20 MHz System	799	819	929	1061	1166	1241	1449
386-16 MHz System	1019	1039	1149	1281	1391	1466	1674
386-20 MHz System	1299	1319	1429	1599	1699	1789	1999
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- 386-16 0 Wait 340
- 286-20 0 Wait 319
- 286-16 0 Wait 259
- 286 6/12 0 Wait 170
- 286 6/10 0 Wait 150
- DTK 8088 10 MHz 68
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- Keytronic 101 Keyboard 48
- 5060 84 Key Keyboard 35
- BTC 5339 Keyboard 39

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- Nanao 9070S 940
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- XT Case (AT Style) 32
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- DOS 4.01 49

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- Panasonic 1180 175
- Panasonic 1191 218
- Panasonic 1124 298
- Panasonic 1595 425
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- Monographic Card $29
- Monographic Printer Card 39
- Color Graphic Card 39
- Paradise VGA Plus 150
- Paradise VGA Plus 16 180
- VGA Card 160
- EGA Card 95
- EGA Printer Card 85

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- 200 Watt Power Supply 48
- 230 Watt Power Supply 50

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- 8087-1 (10 MHz) 145
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- Fujitsu 360KB/1.2 MB $57/72
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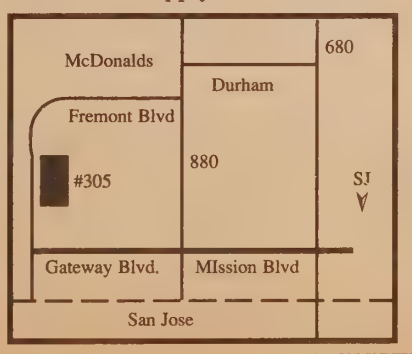

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January 30–February 2 Network Planning, Support, And Management Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

January 30–February 2 Software Quality Assurance & Testing Course. San Diego. Integrated Computer Systems. Call: 1-800-421-8166.

January 31–February 2 Alliance 90 US–Japan High Technology Conference. Tokyo. DEFTA, Inc. Call: (415)424-0940.

February 1–3 Computers And Reading/Learning Difficulties Conference. Richmond. Computer-Using Educators. Call: Diane Frost or Gerald Block, (415)222-1249.

February 5–6 Implementation Strategies For Integrating Expert Systems Into Mainstream Computing Seminar Series. San Diego. Decision Support Technology. Call: (617)354-6400.

February 5–9 6th International Conference On Data Engineering. Los Angeles. IEEE Computer Society. Call: (202)371-1013.

February 6–9 BAST Workshop. Bodega Bay. IEEE Computer Society. Call: Edward McCluskey, (415)723-1451.

February 6–9 Software Development '90 Conference. Oakland. Software Development Seminars. Call: Cheryl How, (415)995-2471.

February 7–9 Product Planning & Evaluation Course. San Diego. Integrated Computer Systems. Call: 1-800-421-8166.

February 12–15 Systems USA: The OEM Systems/Subsystems Conference And Exposition. San Jose. American Electronic Association. Call: Anne Weber, (714)669-1201.

February 13–16 Software Requirements & Design Specifications Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

February 22–25 TED2 Communications Conference. Monterey. Technology Entertainment Design. Call: Bill Rosenzweig, (213)832-9396.

February 26–March 2 IEEE Computer Society COMPCON Spring '90. San Francisco. IEEE Computer Society. Call: (202)371-1013.

As a community service, MicroTimes *lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month, two months before the coverdate of the issue in which you'd like it to appear (i.e., the deadline for the March issue, distributed during February, is January 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.*

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

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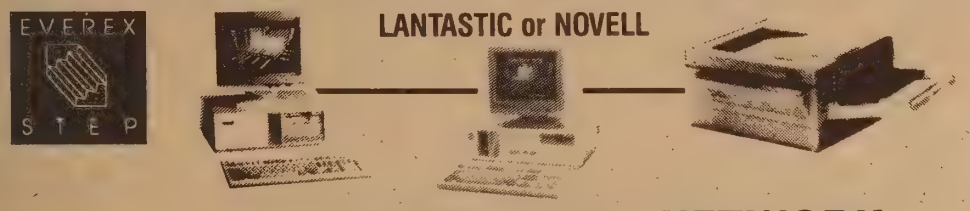

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w/20 MB Hard Disk (65 ms/MFM)	$689	$789	$829	$1,139	$1,189	$1,314	$1,489
w/42 MB Hard Disk (39 ms/MFM)	$809	$909	$949	$1,259	$1,309	$1,434	$1,609
w/80 MB Hard Disk (28 ms/MFM)	$1,069	$1,169	$1,209	$1,519	$1,569	$1,694	$1,869
386/16SX (1 MB)							
Basic System	$799	$899	$939	$1,249	$1,299	$1,424	$1,599
w/42 MB Hard Disk (39 ms/MFM)	$1,109	$1,209	$1,249	$1,559	$1,609	$1,734	$1,909
w/65 MB Hard Disk (28 ms/RLL)	$1,199	$1,299	$1,339	$1,649	$1,699	$1,824	$1,999
w/80 MB Hard Disk (28 ms/MFM)	$1,369	$1,469	$1,509	$1,819	$1,869	$1,994	$2,169
386/20 (1 MB)							
Basic System	$1,099	$1,199	$1,239	$1,549	$1,599	$1,724	$1,899
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w/65 MB Hard Disk (28 ms/RLL)	$1,599	$1,699	$1,739	$2,049	$2,099	$2,224	$2,399
w/80 MB Hard Disk (28 ms/MFM)	$1,769	$1,869	$1,909	$2,219	$2,269	$2,394	$2,569
w/100 MB Hard Disk (17 ms/ESDI)	$2,299	$2,399	$2,439	$2,749	$2,799	$2,924	$3,099
w/150 MB Hard Disk (17 ms/ESDI)	$2,499	$2,599	$2,639	$2,949	$2,999	$3,124	$3,299
386/25C (1 MB)							
Basic System	$1,599	$1,699	$1,739	$2,049	$2,099	$2,224	$2,399
w/42 MB Hard Disk (28 ms/MFM)	$1,919	$2,019	$2,059	$2,369	$2,419	$2,544	$2,719
w/65 MB Hard Disk (28 ms/RLL)	$1,999	$2,099	$2,139	$2,449	$2,499	$2,624	$2,799
w/80 MB Hard Disk (28 ms/MFM)	$2,169	$2,269	$2,309	$2,619	$2,669	$2,794	$2,969
w/100 MB Hard Disk (17 ms/ESDI)	$2,699	$2,799	$2,839	$3,149	$3,199	$3,324	$3,499
w/150 MB Hard Disk (17 ms/ESDI)	$2,899	$2,999	$3,039	$3,349	$3,399	$3,524	$3,699

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w/65 MB Hard Disk (28 ms/RLL)	$2,799	$3,299	$3,424	$3,524	$3,599	$4,399	$5,799
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w/100 MB Hard Disk (17 ms/ESDI)	$3,499	$3,999	$4,124	$4,224	$4,299	$5,099	$6,499
w/150 MB Hard Disk (17 ms/ESDI)	$3,699	$4,199	$4,324	$4,424	$4,499	$5,299	$6,699
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w/65 MB Hard Disk (28 ms/RLL)	$3,199	$3,699	$3,824	$3,924	$3,999	$4,799	$6,199
w/80 MB Hard Disk (28 ms/MFM)	$3,369	$3,869	$3,994	$4,094	$4,169	$4,969	$6,369
w/100 MB Hard Disk (17 ms/ESDI)	$3,899	$4,399	$4,524	$4,624	$4,699	$5,499	$6,899
w/150 MB Hard Disk (17 ms/ESDI)	$4,099	$4,599	$4,724	$4,824	$4,899	$5,699	$7,099
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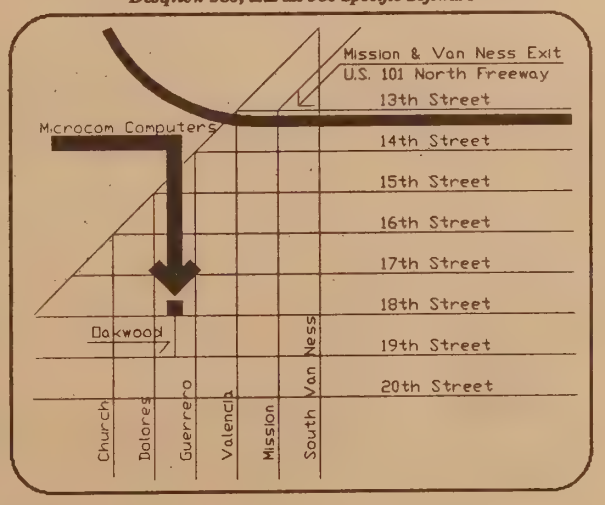

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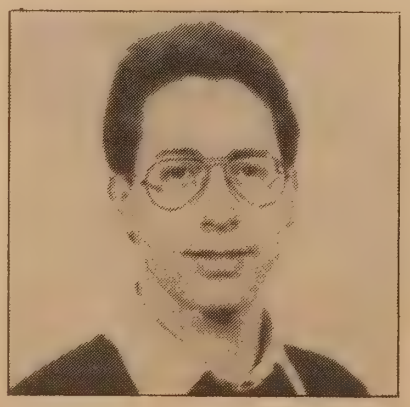

Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

Quakes In The Valley; dBASE IV 1.1 In Beta; New Mainframe From DEC

Earthquakes And Micros

The great Bay Area earthquake of October had thousands of ramifications on the micro industry. Most of the companies based in Silicon Valley fared reasonably well, getting back to normal within about a week.

Some lost inventory due to water and falling-object damage but were able to continue to fill orders without much interruption. Apple and Borland both lost use of buildings but were able to move workers to new buildings without much pain.

Most of the disaster-relief agencies got quick help from many local user groups and individuals who donated or lent equipment and volunteered time for data entry and organization tasks. Local Red Cross chapters were especially grateful for computer help so that they could match donations with needy victims and find shelter for the newly homeless.

Micro users, it is hoped, learned something from the quake. First and foremost, your backups are important. (If you're asking "What backups?" you're in for big trouble well before the next earthquake.) People who kept backups in places away from their computers understood what can happen when a building is destroyed. People who use their micros every day and lost their electricity for a while are starting to understand the advantages of having a backup portable computer.

Two MacUser staffers, John J. Anderson and Derek Van Alstyne, were killed in the earthquake when the wall of a building that they were driving by crushed their car. MacUser publisher William Ziff has started a trust fund for Anderson's two young children to help cover their futures, and many MacUser employees (as well as the employees of competing magazines) have already contributed significant amounts. You can send contributions to the Anderson Trust Fund, c/o Nancy Woods, Human Resources Dept., Ziff Communications, One Park Ave., New York, NY 10016.

Beta-Test Of New dBASE IV

Almost a year after the first version of the product was released, Ashton-Tate has begun outside testing of *dBASE IV* version 1.1. Given the late start, it is likely that a fully functional version of the program won't be available for at least four months. Ashton-Tate is releasing various beta versions in phases to different corporations, authors, and select end-users.

Last month's *MicroTimes* contained an incorrect statement about version 1.1. We said that the standard edition would not include A-T's bug-ridden SQL. In fact, it will (presumably with the bugs fixed); it will not include SQL Server. Thus, the standard edition, which can run on a 640 K machine, will have both the regular dBASE language and SQL; the Server edition (which requires an 80286 or 80386 CPU and a megabyte of memory) will allow other PCs to access databases through SQL requests.

The VAX 9000, on which DEC spent over $1 billion in research and development, allows current DEC users to move up to more powerful computers without having to switch to other manufacturers.

It is not clear (even to many people at Ashton-Tate) why someone would want to use the SQL language with *dBASE IV*, since the dBASE language is much more powerful and easier to use than SQL. In fact, many people would love to see SQL removed so that the program had more free memory and didn't take up so much space on the disk for people who never want to use SQL.

DEC Announces New VAX Mainframe

Competing with IBM is never fun, especially when you do it in a market of which IBM owns 80%. However, Digital Equipment Corporation decided to make a go of it with a new line of VAX computers that are as powerful as IBM's mainframes but run on existing VAX software.

The VAX 9000, on which DEC spent over $1 billion in research and development, allows current DEC users to move up to more powerful computers without having to switch to other manufacturers. This is DEC's second attempt at the mainframe market (unlike what most of the press said); its first, the System 20 in the early 1980s, was a costly and embarrassing flop. The VAX 9000 is a minimum of 30 times faster than DEC's VAX 780 workhorse with one CPU; with four CPUs, the machine screams at 100 times the speed of a 780. DEC emphasized that this performance was achieved in a system that is air-cooled and

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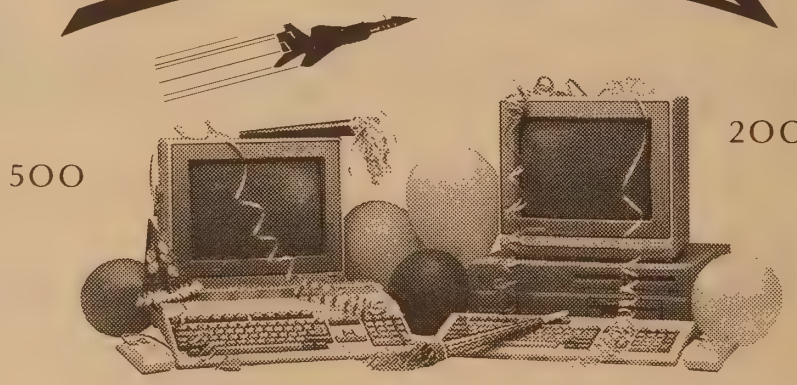

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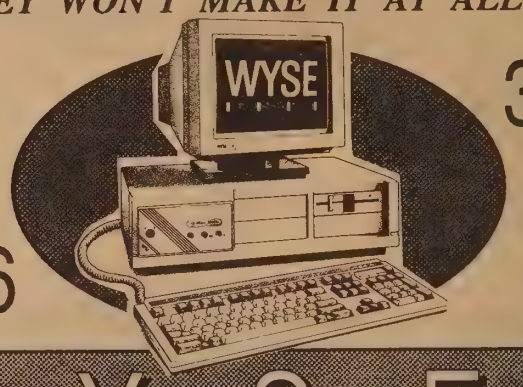

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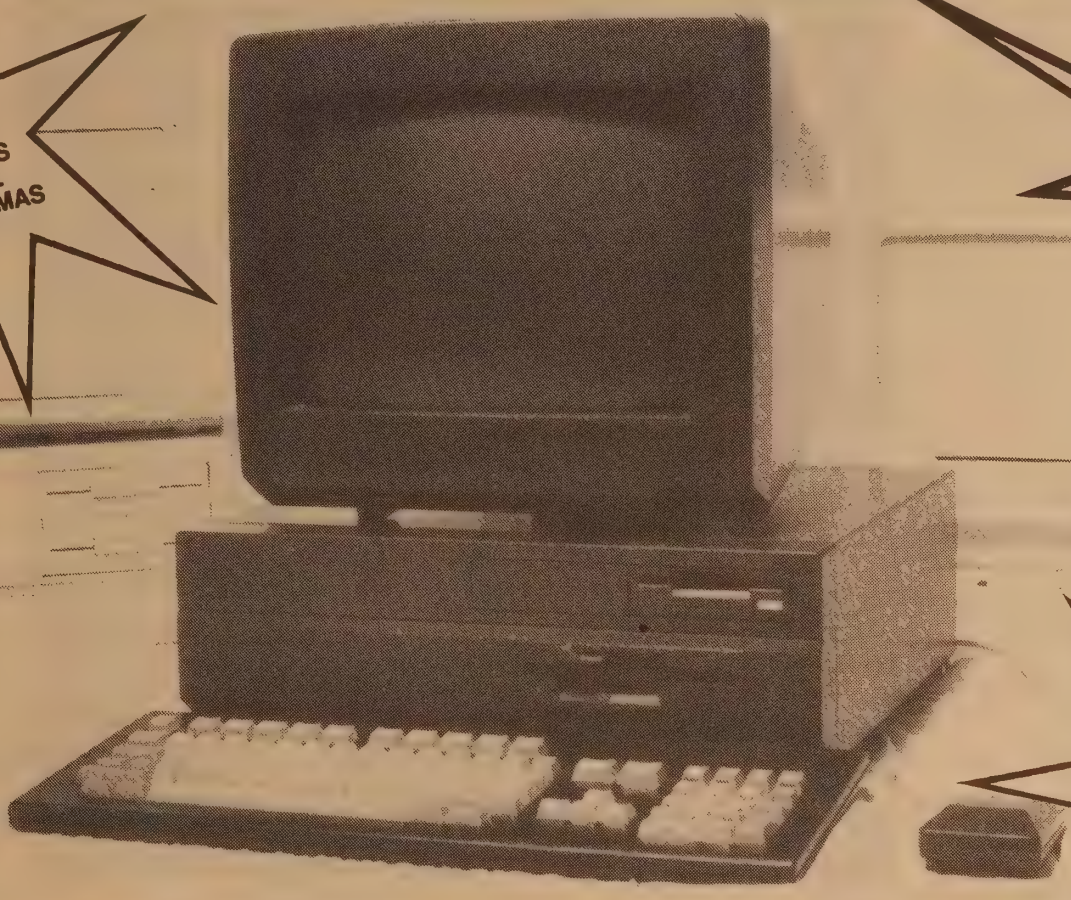

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"The Organizer"—winner of the Paul Hoffman hype-of-the-month award.

can work in a standard computer room.

The news was greatly appreciated by DEC's customers. DEC is now the only major company with an entire range of CPUs from micros to mainframes that can run the same software. It is expected that the existence of the VAX 9000 will help spur lagging sales of DEC's MicroVAX, the low end of the VAX line. Many DEC customers use MicroVAXes to create software that will work on the mid-range DEC systems; these will also work for the new high end. The new systems will begin shipping in the middle of next year.

The VAX 9000 incorporates a new, proprietary chip packing technology that DEC officially unveiled in September. DEC says that this new technology allows it to make circuit boards that are 30 times as dense as current boards. This allows DEC to pack much more power into a small area. The new boards use special board controllers that let the chips run faster and be closer together. DEC said that it has no intention of licensing this technology, for which patents have been applied, to any other computer manufacturer.

Major UNIX Workstation Manufacturers Finally Agree On Speed Tests

Until recently, every UNIX hardware manufacturer had a favorite benchmark test for showing how fast their system was compared to the competition. Of course, this made it almost impossible for potential buyers to compare systems, since no two benchmarks were the same.

Last month, the largest group of manufacturers ever agreed on a single suite of benchmark tests. A non-profit group, the Systems Performance Evaluation Cooperative (SPEC), announced the first version of the benchmark tests, which include tests for engineering/scientific programs. All results of the benchmarks are normalized against the VAX 780, a standard for mid-sized UNIX systems. The results, called SPECmarks, are the geometric mean of the ten tests.

SPEC marks the first time that all major players have agreed on a benchmark system. It consists of Apollo, AT&T, Control Data, Data General, DEC, Hewlett-Packard, IBM, Intergraph, MIPS Computer Systems, Motorola, Multiflow Computers, Stardent, and Sun Microsystems. Other major players, such as Sony, are also expected to use the SPECmarks in their advertisements and marketing literature. Future SPECmarks will address other parts of workstations, and a super-SPECmark may evolve.

The first set of results held few surprises. The major systems tested include:

System	SPECmark
MIPS M/2000	16.5
Apollo DN10010	14.5
Sun SPARCstation 330	11.3
MIPS M/120-5	11.2
DECstation 3100	10.1
HP9000 Model 834	9.5
MIPS RC2030	9.3
Sun SPARCstation	18.3
DECstation 2100	7.5

Excel Not The Only Windows Spreadsheet

MarketMosaic, producer of the popular *Twin 1-2-3* clone spreadsheet program for MS-DOS, has introduced the first major competitor for *Excel* under *Windows*. *Twindows*, this month's winner for overly-cute software names, allows you to use *1-2-3* commands or normal *Windows* menus and dialog boxes. You can use the mouse or just the keyboard for commands.

Twindows will share data with other *Windows* applications through Microsoft's dynamic data exchange (DDE) and through the *Windows* Clipboard.

Mosaic emphasizes that *Twin* and *Twindows* have many features missing in *1-2-3* versions 2.2 and 3, including undo, better memory management, and links to external spreadsheets. Although it will be quite tough to compete with Excel's huge installed base, *Twindows* will appeal to *1-2-3* users who want to have keystroke-for-keystroke compatibility.

Getting Small and Smart: Hand-held Electronic Encyclopedia

Move over, mini-dictionaries: what the world really needs is a 6 oz., 20-square-inch electronic encyclopedia. The new device, expected to cost under $400, will be released after Christmas. It holds the entire *Random House Encyclopedia*, over 10 megabytes' worth of completely searchable text. The device will be produced by SelecTronics (makers of many hand-held text systems such as dictionaries and translators) and uses technology from Microlytics, a Xerox subsidiary. The Random House name and the novelty of having a completely cross-indexed system that you can put in your pocket or lunchbox should cause high initial sales of the unit.

Zenith Sells Its Computer Business To Groupe Bull

In the latest tale of international corporate mergers, Zenith got out of the computer market by selling its computer manufacturing group to European giant Groupe Bull for $600 million. The Zenith units were quite profitable and still growing, but the parent company wanted to get out of the highly-competitive field and focus on television and other consumer electronics.

Groupe Bull, known mostly for its minicomputers, mainframes, and software, will keep most of the Zenith line intact and will vastly expand Zenith's distribution in Europe. It will also use Zenith's large

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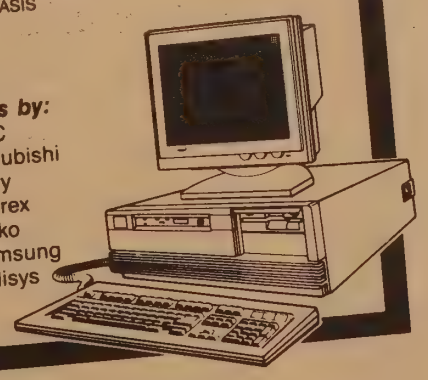

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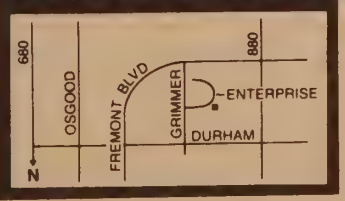

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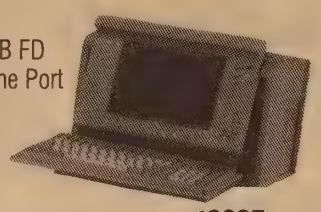

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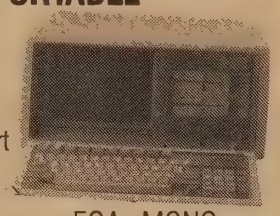

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NEWS AND ANALYSIS

Twindows, this month's winner for overly-cute software names, allows you to use _1-2-3_ commands or normal _Windows_ menus and dialog boxes.

installed base in the US as another foothold in the domestic market.

One area of special interest is government contracts. Groupe Bull has a large number of European contracts, and Zenith has been very successful in US contracts. The combination of the two will give Groupe Bull a significant advantage in bidding, since they will be a single source for the entire range of computers.

Worst Press Release Of The Month

Sure, every software and hardware company thinks that its new product is the greatest thing. Hell, some even think the world should stop when they release a new version.

This month's winner, however, wins the award for most hyperbole for the least important product. The founders of Kensington Microware have created a new company, CoStar, to create new and terribly exciting computer accessories. "We believe our team is uniquely qualified to conceive of and design the next generation of personal computer accessories. The CoStar products are unique, with great attention given to industrial design."

With such breath-taking prose, what could this company possibly do for its first product? A printer cart.

Actually, a printer cart called "The Organizer" (yes, they got a trademark for that incredible name), specifically for the Apple LaserWriter II. The press release assures us that the cart "is an exact match of the printer's design and aesthetics. Its functionality and beauty make it a welcome and useful addition to any office." Be still my beating heart.

This kind of prose is almost acceptable until you look at the enclosed glossy press photo and realize that the cart is a different color than the LaserWriter II and that it has a very different exterior. Essentially, the product is a rolling cart with four shelves that happens to hold something that is the same size as a LaserWriter II, and it only costs $300.

Software Patents Become Fodder For Lawyers

Quickview Systems, famous for threatening software developers over its patents for displaying parts of a database record, has now sued Apple, claiming

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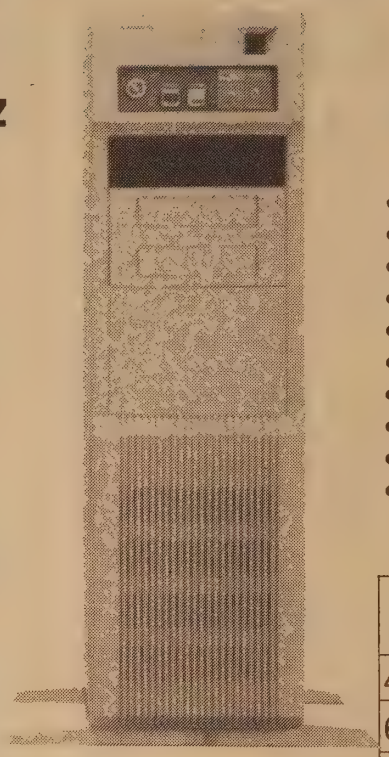

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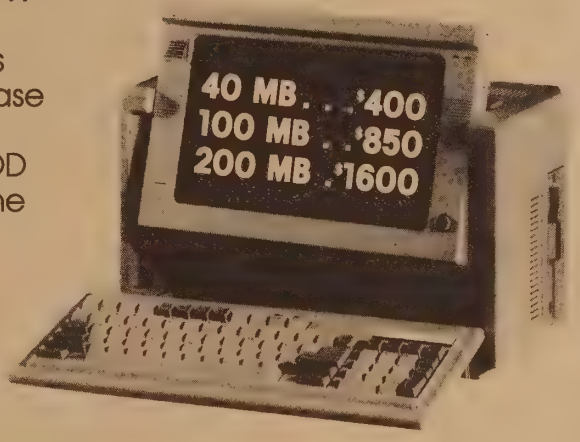

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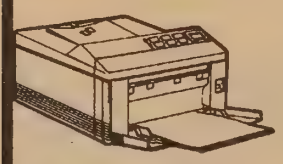

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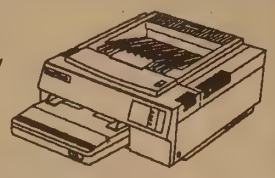

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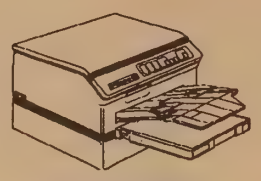

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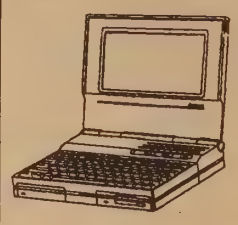

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NEWS AND ANALYSIS

that the widely-used *HyperCard* application infringes on its patents.

Apple in turn sued to overturn Quickview's patents.

Quickview president Paul Heckel claims that his patents cover any software that shows parts of a record in a database and then allows the user to reveal the rest of the record. *HyperCard*, of course, can do that, but can do almost anything else as well.

Apple is treating the case as a nuisance lawsuit and may decide to countersue to prevent similar suits in the future.

Most software cases are based on copyrights. Infringing software is accused of either stealing object code (the runnable part of the program) or source code (the human-readable basis for the object code). In the last few years, a third type of copyright infringement, commonly called "look-and-feel" theft, has also arisen.

Quickview's case is based on patent law. Quickview applied for, and received, patents on specific parts of its *Zoomracks* software, a package that has sold poorly since it was introduced in 1985. Heckel claims that parts of *HyperCard* infringe on his patent.

Apple can win its case by showing any one of three things:

- That Quickview's patents are invalid because the patent examiner should not have awarded the patents in the first place;
- That *HyperCard* does not do the things that are covered in Quickview's patents;
- That *HyperCard* does the same thing that is patented but does it using a different method.

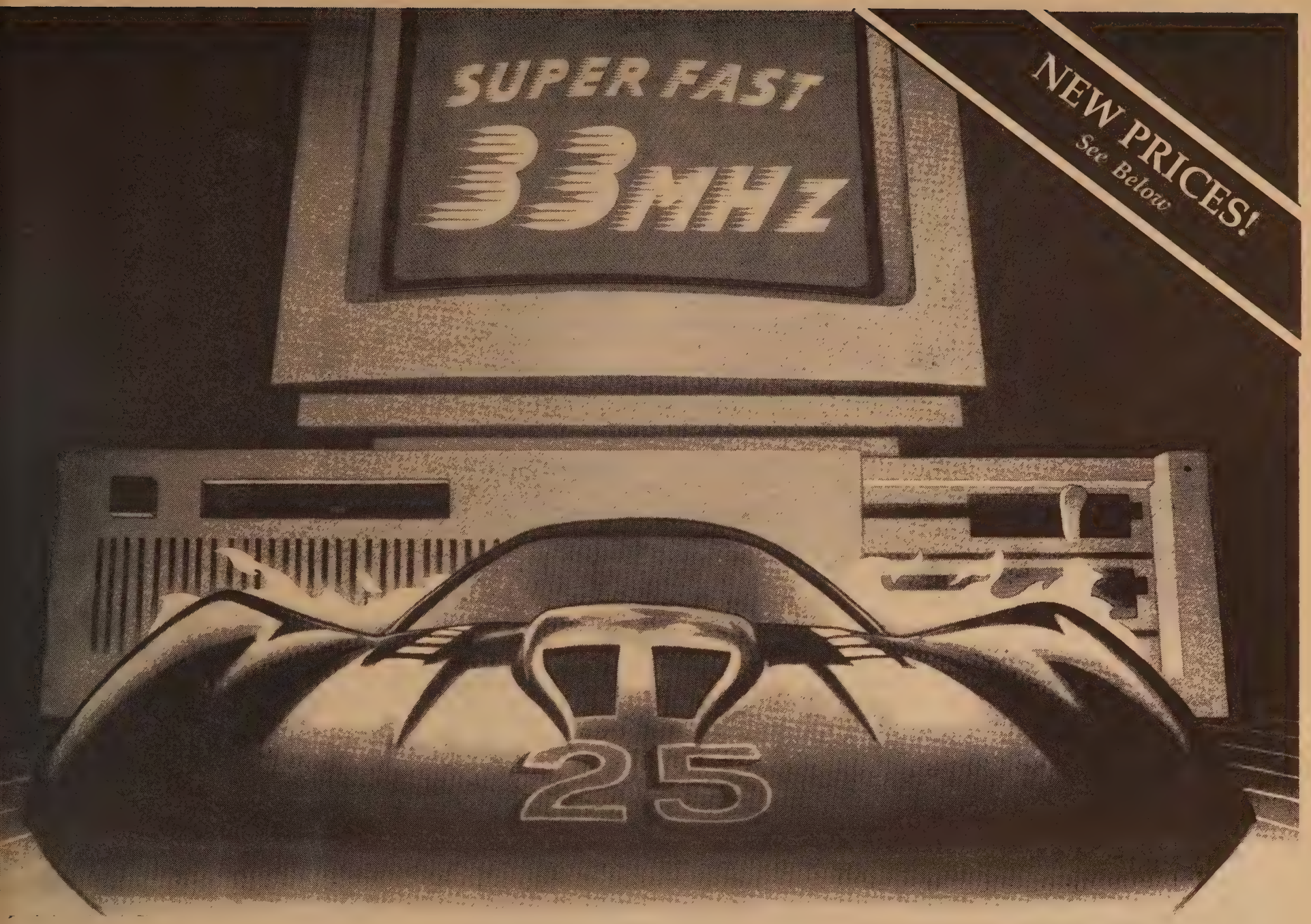
To get a patent, you must prove that the process you are patenting is innovative, is not obvious, and somehow advances the state of the art. The majority of patents that are tried in the courts are overturned.

To legally challenge *HyperCard*, Quickview must prove that *HyperCard* does exactly what is covered in Quickview's patents, and that it does it using the same methods. It is highly unlikely that Heckel will be able to prove this; it is more likely that he is simply hoping for Apple to pay him off to avoid the high costs of a lawsuit.

Bug In 80486 Chip Delays Shipment

Only weeks before Intel expected to begin quantity shipping, Compaq discovered a bug in the trigonometric analysis unit of the 80486 chip, forcing Intel to go back to the drawing board. This will delay the volume shipments by about two months and will dash the many manufacturers' hopes of showing shipping units at COMDEX.

The bug affects programs that use trigonometry, such as CAD programs and engineering software. IBM has been shipping 80486 add-in boards for over a month and will probably have to supply new CPUs for those boards when they become available from Intel. ■



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Laptop Ideas, And A New Proposal For A Maturing Micro Industry

Continuing conversations formulating our futures.

Laptops And Keyboards

Fat-fingered folks, function-key fondlers and numeric-pad pounders often find laptop keyboards, uh, depressing.

As a solution, Paul Wolborsky of Fairfield suggests folding keyboards. Fold over the numeric and function keys when closing the laptop. For use, unfold and lock in place, providing a robust keyboard.

Umbilicals For Quiet & Convenience

As laptops become more widespread, so do complaints about their use—noisy use—in meetings. Audio feedback is a sound typing aid, but silent keyboards are sometimes needed.

A pluggable laptop keyboard would allow a quiet keyboard to be offered as an option. Then, other keyboards could also be options—alternative keyboard layouts, Dvorak keyboards (not named after the Big John), special-applications, etc.

Also: Keyboards on umbilicals can be positioned as desired, without having to move the display. Compaq's laptop incorporates this convenience—and their keyboard can remain in the box for use in close quarters, or be removed and moved around on its umbilical when space permits.

Closing Thoughts On A Laptop

To allow maximum-sized displays, hinge the top at the back, not in the middle as some do. Once open, all but a tiny perimeter should be the display, not a small display inside a big top as some do. That's like putting a tiny shrimp cocktail inside those big, mostly glass serving bowls.

Wolborsky also suggested embedding solar cells in the laptop top. Batteries could get a charge out of that!

To cut weight and bulk, he proposed making keyboards as thin plastic plates, with embedded or engraved wiring.

Also, he requested removable keycaps with options available, such as higher or lower special keys, special symbols, etc. Hot Dang! Let folks program their machines, an' they start wantin' to change the hardware to meet their personal preferences!

About The Computer Faire

John Dvorak is often accused of sleazy gossip, rumor mongering, and personalized bitching and moaning. But sometimes I agree with him:

After last Spring's Computer Faire, he titled his show review, "Time to Fix the West Coast Computer Faire—It's Broken." (Note: I am asking that my bio, below, no longer mention that I founded the Faire. Ol' timers, who know how exciting it once was, probably know I ran it, 1977-1983. And I'd just as soon that newcomers not associate my name with more recent Faires.)

Last spring, the Faire was held in San Francisco's Civic Auditorium and Brooks Hall—jus' like the good ol' daze. But, when I arrived, I found the Auditorium an echoing emptiness, used only for some tech talks. It was a stark and depressing contrast to the ecstatic chaos of multitudinous micros and massive mobs, sardined there during the first eight Faires.

Even worse, when I went underground to the exhibit area, I found it only part-filled. In fact, I toured the entire exhibition in under two hours—including several leisurely conversations with old friends. Now, you gotta understand—I'm a hardcore technojunkie, inevitably intrigued by innovation. It's hard for me to get in and out of just a computer store in less than two hours.

Frankly, I was surprised when the Faire organizers called, inviting me to again be listed on their Program Committee for 1989. After last Spring, I had rather assumed it was their last Faire. (I declined their invitation. In previous years, I found that the Program Committee—with its many impressive names, including Dvorak—was encouraged to propose topics and speakers, but had little control over the selection or quality of those chosen.)

A Microcomputing Association And Convention

Microcomputing's overdue to have its own industry-wide organization, and association-owned, nonprofit convention. Consider:

•There are major threats of legislative stupidity and self-serving manipulation by powerful players. Yet no recognized, unified industry voice counters such intrusion.

•Various standards are needed, benefiting industry and users alike. But they are being developed—if at all—by numerous groups, organizations and companies. Sometimes they are contentious, sometimes competing, and sometimes self-serving to the detriment of nonmembers. Participation therein is time-consuming and, too often, redundant.

•The industry/user community is now robust; technical development and applications continue to accelerate. Yet no single event is recognized as the definitive opportunity for professionals to confer on the state of the art.

•Manufacturers could benefit from a major exhibition that is nonprofit, and under their control.

Consider numerous successful models: The semi-annual Consumer Electronics Show greatly benefits consumer electronics manufacturers, dealers and practitioners—industry-owned and industry-run. The National Computer Conference, and the Joint Computer Conferences preceding it, did the same for the "big" computer industry and traditional computer professionals—until AFIPS members became unresponsive. (The American Federation of Information Processing Societies owned and operated the NCC.) Wescon, serving the western electronics industry, is a joint effort between the IEEE and a trade association. The Institute of Electrical and Electronics Engineers' western sections run Wescon's conference programs; the electronics manufacturers' trade association runs the exhibition.

A microcomputing association and association-run conference and exhibition could be beneficial to professionals, serious end-users and the microcomputing industry—and, believe me, it could be self-supporting.

Quickies

Nobel Peace Prize winner Oscar Arias, President of Costa Rica, visited Silicon Valley in September. He wants high tech development in his country—for more than a century, one of the most stable democracies in the Western Hemisphere. (Must we channel all our offshore loot to Taiwan and the Orient? Costa Rica flights are shorter, prices cheaper, and scuba-diving's great.)

For defense industry employees: Rumor is that some Department of Defense wheels are increasingly concerned about Russia becoming such an unreliable enemy with all this glasnost going around. And an 8/89 poll by the Washington Post and ABC showed "the military" was the government budget area where respondents most wanted reductions.

Gallager recently observed that our federal legislature is called "Congress" rather than "Progress"—and suggested that accuracy requires the spelling to be "burrocrats."

Standing On One Another's Shoulders

Send suggestions to Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside, CA 94062. Published proposals will be attributed to their authors unless anonymity is requested. ■

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Jim Warren founded the Silicon Gulch Gazette *and* Infoworld *newspapers, Video Initiative and the DataCast proposal for broadcast-based paperless electronic newspapers utilizing personal computers. He was the founding host of the PBS* Computer Chronicles *series, founding editor of* Dr. Dobb's Journal, *and founding president of the Microcomputer Industry Trade Association.*

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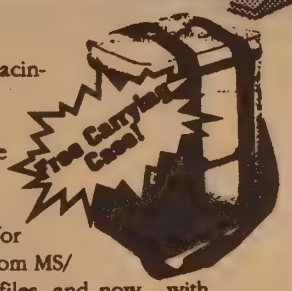

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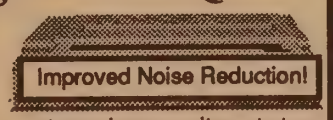

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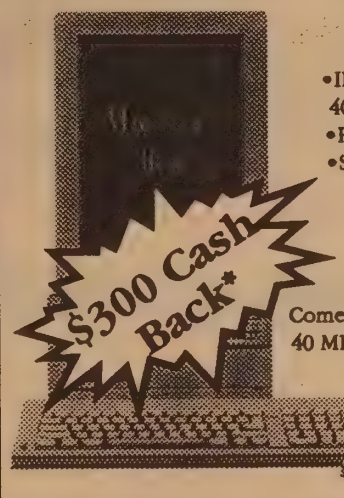

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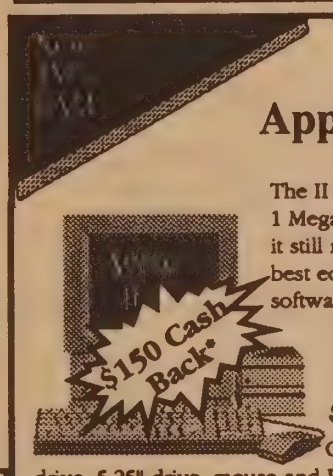

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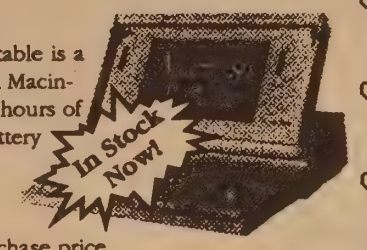

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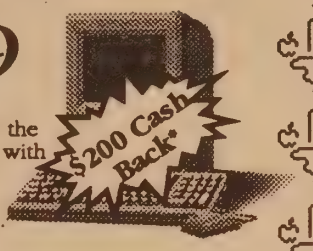

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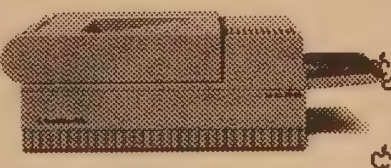

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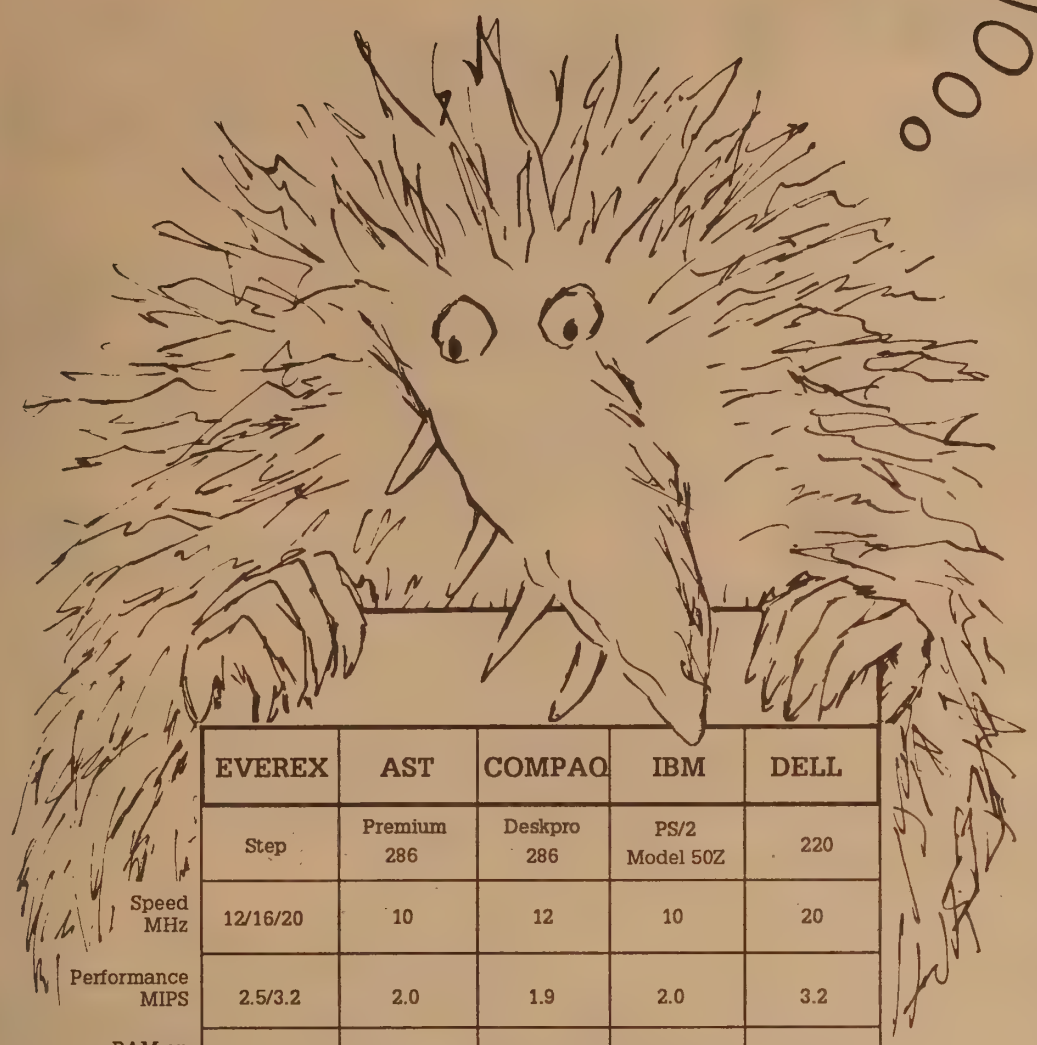

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RAM on Motherboard	1-4MB	512K-2M	512K-2M	1MB	1-4 MB
HD Interleave	1:1	1:2	1:2	1:2	1:1
Programmable LED	Yes	No	No	No	No
Slots/Drive Bay	8/5	8/5	8/5	3/2	3/2
OS/2 Support	Yes	Yes	Yes	Yes	Yes
Warranty	1yr on-site	1yr carry in	1yr carry in	1yr carry in	1y on site
386 Expandability	Yes	Yes	No	No	No
AMMA Cache	Yes on 28620	No	No	No	No

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EVEREX computers are available in small and large footprints. The small footprints have 8 available slots and 5 half height drive bays.
7. DOS 3.3 is standard. **8. OS/2**
Most vendors like to hide the fact that OS/2 is vendor level specific. This means vendors seeking to have OS/2 compatibility have to provide you with their version of OS/2. **EVEREX** has a version OS/2 available as an option for their machines.
9. Warranty
EVEREX computers and all **EVEREX** components -- including hard disks, monitors, and peripherals come with a full year of on-site warranty. This service is provided through NCS which has 106 locations nationwide.
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Tales From The Quake: The Industry Pitches In

Checking around Northern California, we encountered varying reports of damage or miraculous escape among hardware and software companies, and swift offers of help and large donations to earthquake relief from around the industry. As the rebuilding begins and the industry returns to a semblance of business as usual, here are some anecdotes and tales of technology to the rescue.

—Mary Eisenhart

The Chronicle's Mac-produced disaster editions. Early reports put the death toll in the hundreds; officials later lowered it to 65.

In The Shadow Of The Cypress

When the Cypress structure collapsed, says Don Sanguinetti, it was literally impossible to see the freeway from across the street for the cloud of dust.

Sanguinetti, co-owner with his brother Daniel of PC Professional, Inc., should know—at the time of the disaster, he, his brother, and 14 other personnel were in the company's Cypress Street headquarters.

PC Professional employees were among the first on the disaster scene, assisting with the rescue of trapped motorists. "The quake hit hard and fast, and we had to think on our feet," said Daniel Sanguinetti. "Until police learned of the Cypress disaster, we were the only available help for those trapped in cars."

"The quake hit hard and fast, and we had to think on our feet..."

When the quake hit, the store immediately lost power and became a nightmare of screeching power-supply alarms, falling monitors and tumbling bookshelves. Daniel Sanguinetti actually saw the collapse of the freeway structure across the street from his storefront. Everyone immediately rushed into the street. "The first thing we saw was a car that had fallen off the top deck. It was on fire, and we managed to get that person out of the car," says Don. The PC Professionals were also able to rescue

Macs To The Rescue At The Chronicle

At 5:04 pm on October 17, the *San Francisco Chronicle*'s October 18 edition was well on its way to completion in plenty of time for its 7 pm first edition deadline. When the quake hit, the *Chronicle*'s building lost power, bringing its huge mainframe to a halt.

According to art director Hulda Nelson, the contingency plan for such unexpected interruptions calls for the *Chron*'s staff to move operations to San Jose, to the offices of the *Mercury-News*. And in the ensuing chaos, the *Chronicle* did manage to get a bus to the office door in San Francisco before it became obvious that it wasn't practical to use the freeway to get anywhere that night.

"So about that point, which was about 9 or 10 at night," she recalls, "we decided to try to power up the Macintoshes using generators." There are several Macs in the art department at the *Chron*, and normally they're used for graphs, charts, headline type, and designing the cover of the Sunday *TV Week* magazine.

"Somebody somewhere found generators that they could rent and bring in here," Nelson says. "Late that night some of our electricians brought a generator up and put it on our fire escape. After tinkering around with that for an hour or so, we were finally able to get five Macintoshes running."

Meanwhile, downstairs in the darkened building, flashlight-wielding *Chronicle* reporters were furiously typing away on their Tandy laptops. One of the Macs had a modem, so the stories went to that Mac (a fact made possible because while the power-consuming state-of-the-art phone system went down right away, a few AT&T fax and phone lines stayed in service).

"As the stories came in, we put them on floppy disks, and then walked, distributing the stuff to the other Macs that were operating. One we used to do maps, one we used to do headlines, and the other two we used to put the stories into *Quark* and style the type so it looked like *Chronicle* type. And then we just outputted it—we'd also powered up a Varityper," Nelson explains.

In another triumph of disaster-driven DTP, the intrepid art department powered up their Canon laser copier and used its fine-photo setting to generate a facsimile of halftones. "They turned out surprisingly well," says Nelson.

The morning after the disaster, the *Chron* was able to distribute over 600,000 copies. The next night, it was Mac to the rescue again: "We had more stories and more generators, more power, so we were able to power up the whole Macintosh system. All of our Macs were up and our file server was up, so it was a lot easier because we no longer had to be running around with floppy disks.

"We had a little time to play on the second night," Nelson says, by way of explaining the larger and more finished October 19 edition.

In words echoed in various forms around Northern California, she laughs, "It was exciting."

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Vendors Offer Help In Recovering Lost Data

As the Red Cross developed an urgent need of technical support, database work, and other computer-based assistance in the wake of the disaster, both individuals and corporations from around the industry responded with donations of time, work, and money.

As it became apparent that one of the quake's long-term effects was an untold amount of lost and perhaps irretrievable data, several companies in the data storage and retrieval industries offered assistance.

SitBack Technologies, publishers of *SitBack* backup software, and Polaroid's Magnetic Media division (which includes attempted data recovery in its diskette warranty) teamed up to offer a special package to users—*SitBack* software and Polaroid diskettes. Additionally, they announced that 10% of all sales generated from the combination package between now and November 30 will be donated to the Red Cross, and that they will be collecting money for the Red Cross at their COMDEX booth. (Call 415/644-3837 for further information.)

...one of the quake's long-term effects was an untold amount of lost and perhaps irretrievable data...

Meanwhile, in response to the data-loss problems of organizations across the Bay Area, San Diego-based Prime Solutions offered to send, at its own expense, teams of engineers and disk drive technicians to the site of any Northern California government agency or nonprofit organization involved in earthquake relief which suffered earthquake-related computer equipment failure. Agencies whose PCs lost data or suffered disk crashes are invited to call Prime Solutions at (619)274-5000.

several other victims, though Don sadly reported that not all the people they pulled from the wreckage survived—from one particular van, they only managed to save five of the eight passengers.

"I didn't think any help was coming," he says, noting that the Cypress collapse looked like the end of the world and it seemed reasonable to assume the rest of the Bay Area was in the same condition. "People were just helping where they could," organizing into small teams and offering whatever aid was possible. When professional rescue workers reached the scene, the PC Professional employees continued to work at the disaster scene.

Though forced from its Cypress Street location by the collapse, PC Professional continued to offer uninterrupted service and support to its customers from temporary quarters, and can be reached at (415)253-0152.

Low Impact In Mountain View

According to Kim Miller of Sun Microsystems, the workstation company sustained very little damage or interruption of operations. The Mountain View buildings had no structural damage and never lost power; the Milpitas facility temporarily lost power and was closed for one day for inspection.

Wendy Hasler of Silicon Graphics reports that while the quake was certainly dramatic out on the landfill by the Bay, it caused no production delays or other serious problems. Indeed, the company was able to have its scheduled board of directors' meeting the next day, and announced that its earnings were up 95%.

Sun Microsystems sustained very little damage or interruption of operations...

Like many companies, Silicon Graphics made a considerable donation to the Santa Cruz Red Cross for earthquake victims; in addition, it set up a crisis center onsite, offering emotional support, legal and financial advice, and other services to quake victims, SGI employees or not.

Remote Phone Service Gives Schwab The Edge

The day after the Almost Big One, the only stock brokerage in San Francisco able to keep trading was Charles Schwab & Co. While the local phone system was only sporadically functional, the broker's contingency plan, developed with American Teleconferencing Services of Overland Park, KS, used audio conferences to back up disrupted voice and data links.

In Kansas City, Schwab's crisis team was able to bypass the still-shaky San Francisco phone system...

ATS established a single-line link from San Francisco to its switching center in Kansas, then set up a conference call for the use of Schwab's branch managers around the country. In Kansas City, members of Schwab's crisis team were able to bypass the still-shaky San Francisco phone system and enjoy clean, uninterrupted phone service.

Additionally, a second audio link provided backup for the computer-based trading system. Audio conferences were established for each of the six types of securities Schwab trades; while brokers were able to use backup computer services for most types of transactions, they were able to fall back on audio quotes and orders to complete several mutual funds trades. ATS, which provides ongoing audio conferencing support for training and interoffice communications, had employees in Kansas working around the clock keeping Schwab's communication links running. (ATS, 913/661-0700.) ■

TurboQuake At Borland

Located close to the quake's epicenter in Scotts Valley, Borland International didn't fare quite so well. While escaping loss of life and serious injury, Borland employees still had to contend with quite a few problems.

According to Judy Roberts at Borland, the executive building, one of two identical structures side by side on the site, was condemned, and employees found themselves doubled up in the surviving building. In addition, there was heavy damage caused by the breaking of the building's main water line—the flooding ruined a good deal of equipment and many data files were lost.

Nonetheless, the company was up and running with amazing speed. Roberts has high praise for the phone company, which had lines working within three or four hours of the quake. President Philippe Kahn, on a promotional tour in Australia when the temblor hit, was on MCI three hours after the disaster and communicating with all the company's executives.

And, she says proudly, *Quattro Professional* started shipping on October 30 as scheduled.

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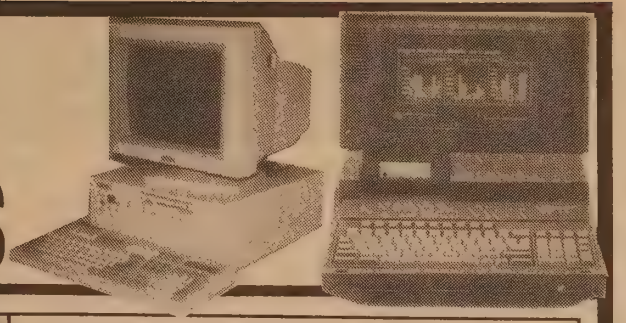

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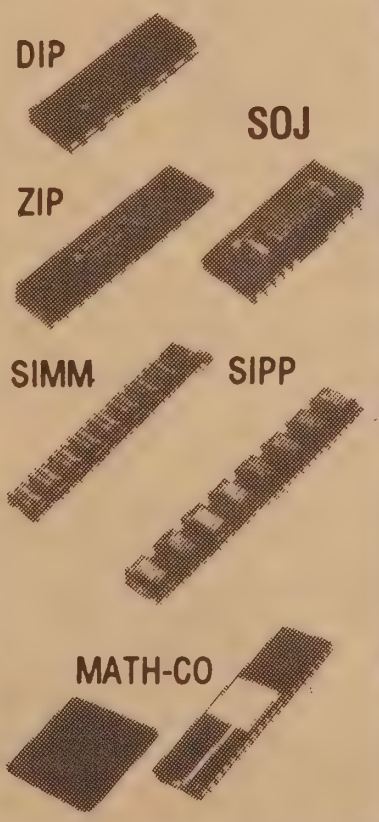

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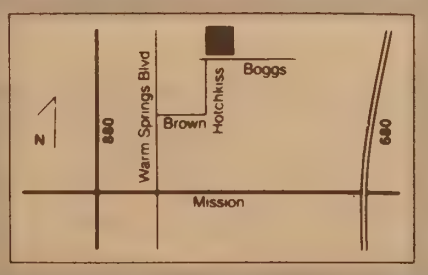

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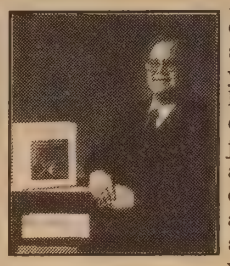

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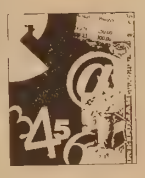

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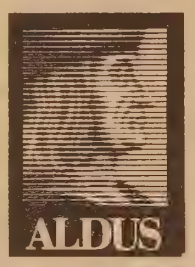

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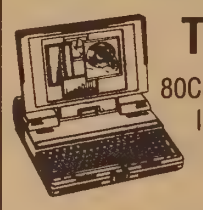

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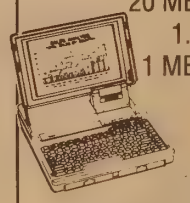

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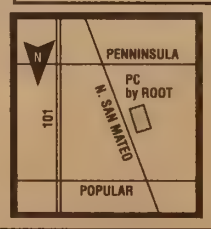

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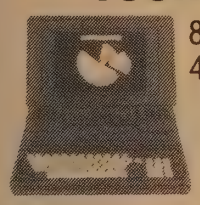
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MIRACLE COMPUTERS

The Epson Equity LT

Efficient And Flexible

By Ed Kahn

Epson, once known primarily as a major player in the printer market, has made several attempts over the years to stake out a claim in the growing portable computer marketplace. In the past, they have come close, but never really quite made it with their CP/M-based models. But now, they have a really credible entry with the Equity LT.

This unit, based on an NEC V30 processor, comes in a number of different configurations. The machine I tested was supplied with a backlit display, 20 Mb hard disk, and a 1200 baud modem. Even though this model has been available for a couple of years, it is worth considering if you are looking for an efficient well-designed computer without lots of frills.

Depending upon the configuration you choose, the machine weighs between 12.6 and 14.2 pounds. The size for any of the configurations is about 12"x14"x3". The machine's standard configuration includes 640 K of RAM, but no expansion possibilities.

Options And Modules

Unlike any other laptop computer I have tested, this machine came to me in several boxes. The primary shipment included the computer itself, documentation, and the software needed to operate the system. DOS 3.2, GWBASIC, and several Epson utilities are included.

The display arrived in a second box. This points out the modular design of the unit. Two displays are available: either a standard LCD or the backlit model for an extra $150. In either case, the display is easily installed by the user. I tested the backlit model, which has a clear blue-on-white display. After I attached the display to the computer, I was unable to get the system working. After a couple of phone calls, Epson advised me to return the computer package and have it replaced. I did so and the system works flawlessly. (I doubt that any end user would have this failure, as dealers normally would put the system together and check it out.)

To get the system up and running, there are two sets of dip switches that have to be set. They are easily accessible and the instructions in the user's manual are clear. The set of switches near the keyboard allows you to select normal or reverse video and whether you will use the LCD or an external monitor. These switches also allow you to select the 10 MHz speed or the slower 4.77 MHz rate if you run software that balks at the higher turbo setting.

The panel of switches on the back control the use of external disk drives, port assignment and the like. The user's guide is so clear about these settings that even the least experienced user should have no trouble setting these switches. Even if you should make a wrong choice, no damage would result. The instructions are further simplified by illustrations where necessary.

Although I tested a computer with a 3 1/2" 720 K floppy and a hard disk, the computer is also available with a pair of 3 1/2" floppy drives. There is the additional option of purchasing an external 5 1/4" 360 K or 3 1/2" 720 K drive from a third party. Epson has included a port for attaching an external drive, but does not sell such a unit for the computer. You will have to set a dip switch to let the computer know that there is an external drive, what letter it will respond to, and if you expect to boot from this drive.

A final part of getting the computer ready is to run the setup program that allows you to set the time and date as well as a few other options. If you buy the computer with the built-in hard drive, you or the dealer will have to format and set it up with partitions. Once again, the instructions in the user's guide are so simple that you should have no trouble if you end up getting the unit from a dealer who does not provide this service.

The unit comes with built-in NiCad

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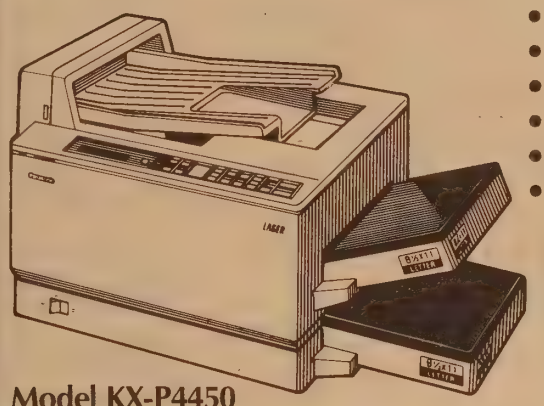

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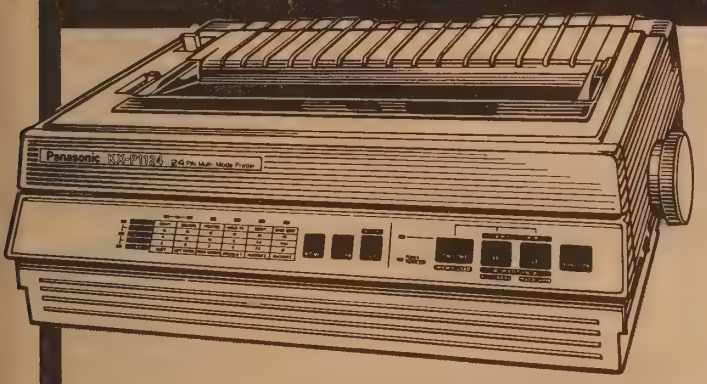

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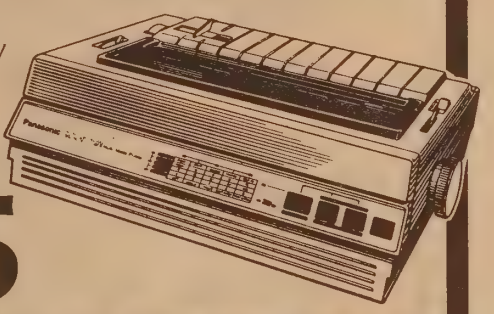

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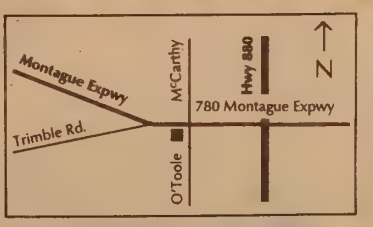

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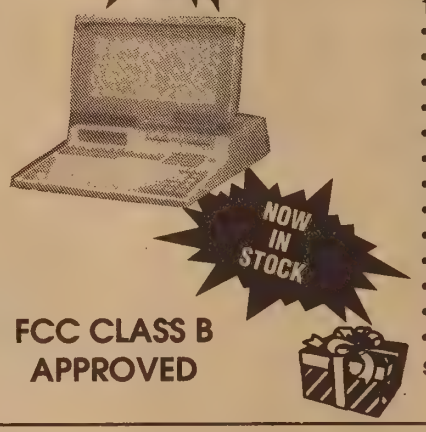

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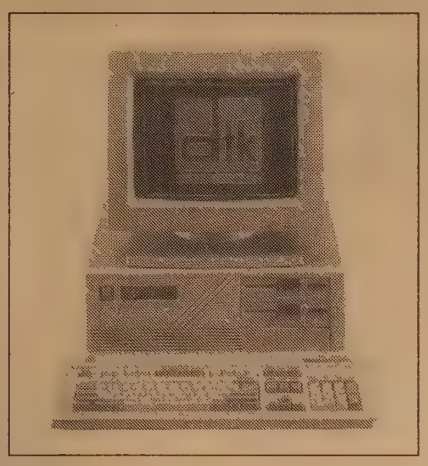

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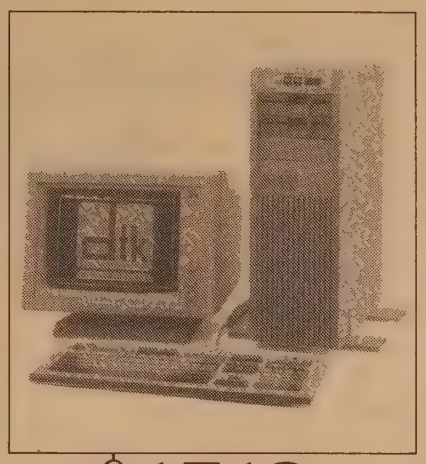
DTK's FCC-Certified KEEN-2030 is a 20 MHz INTEL 80386-based high-performance system packaged in a mini-AT cabinet. It features 2 serial ports, 1 parallel port, 8 expansion slots and up to 8MB of RAM.

A 4MB version of the KEEN-2030, equipped with an 80MB hard disk and 80387 math coprocessor, was used by INFOWORLD magazine as the test bed for a product comparison of four high-end Computer-Aided Design (CAD) systems (See the July 17, 1989 issue).

$899 Suggested Retail—Bare Bone System



25MHz Bare Bone System
Offers Low Price/High Performance with Cache

The DTK KEEN-2500 offers performance superior to other 80386-based 25 MHz computers, at a lower price.

The system utilizes the high-quality PEM-2500 motherboard with an innovative 64KB/256KB selectable write-back cache, eight expansion slots, and room for 16MB of 32-bit DRAM.

The KEEN-2500 is certified for hardware and software compatibility by XXCAL Test Labs. It is Landmark VO.99 rated at 43.5 and Norton SI V4.0 rated at 32.5, making it one of the fastest systems in its class. In fact, MIPS magazine rates it the 386/25 price/performance leader running under SCO XENIX.

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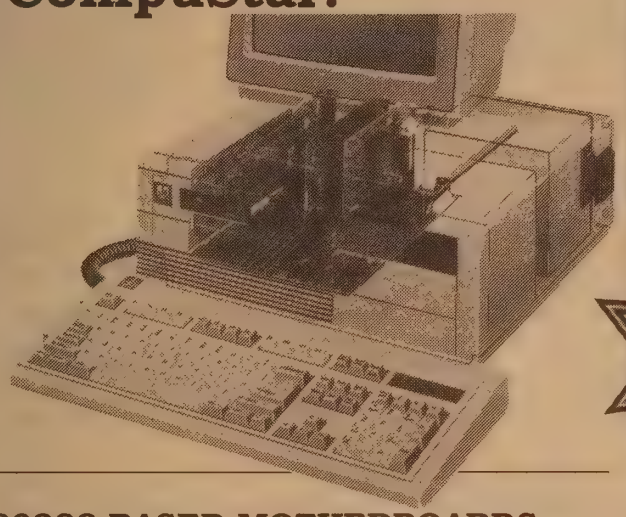

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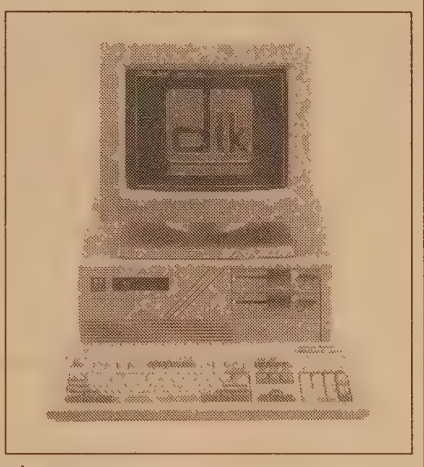
12 MHz Zero Wait State
80286-Based System Features VLSI Chip Set

Although the DTK TECH-1230C is packaged in a compact "Mini-AT" cabinet, the system delivers "BIG" system performance. Incorporating the DTK Mini-AT motherboard with built-in serial and parallel ports, the TECH-1230C features the VLSI chip set and eight expansion slots (four 16-bit and four 8-bit).

The TECH-1230D uses the same motherboard, but comes in a full-size AT cabinet where extra drive bays are a concern. Both systems are FCC, UL and SA certified and come with DTK's one-year warranty.



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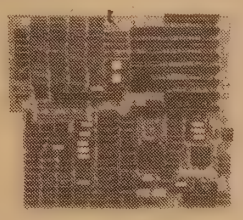
80386-BASED MOTHERBOARDS

PEM-2500 25 MHz, Cache '386

- Dual speed: 10/25 MHz
- 64 KB write-back cache, switchable to 256 KB
- Up to 8 MB of DRAM on board, expandable to 16 MB (optional memory expansion card)
- 8 expansion slots
- Certified for compatibility by XXCAL Test Labs
- Landmark VO.99 rated at 43.5 MHz
- 6.2 MIPS

$1199 Suggested Retail



PEM-2000 20 MHz

- Up to 1 MB RAM on board, expandable to 17 MB with two PEI-301 RAM cards
- Two 32-bit memory bus slots, five 16-bit and one 8-bit slot
- 2 serial, 1 parallel ports built-in
- Landmark VO.99 rated at 26.5 — 27.3 MHz

$699 Suggested Retail

80286 BASED MOTHERBOARDS

PTM-1230C, 12 MHz, Zero Wait State, Mini '286

- Up to 1MB of on-board RAM
- VLSI chip set
- Built-in: 2 serial and 1 parallel ports
- Landmark VO.99 at 15.9 MHz

$299 Suggested Retail

PTM-1030 10 MHz, Zero Wait State, Mini '286

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- 16-level interrupt
- VLSI chip set
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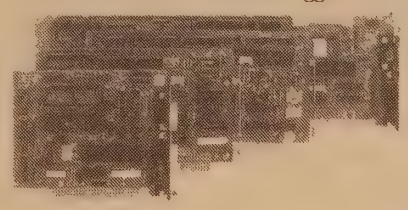

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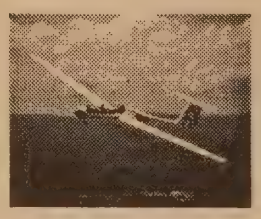

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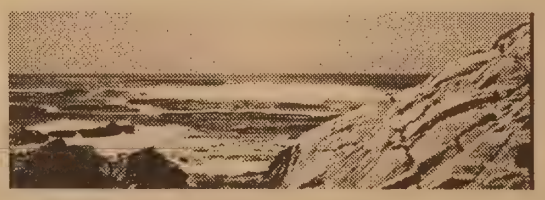

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batteries that will run the system for up to seven hours if you do not have a hard disk or backlit display. With these features, however, expect considerably shorter periods of battery use before the low battery indicator comes on.

A combination AC power supply and battery charger comes with the computer. This allows you to use the machine as an AC-powered unit without fear of overcharging the rechargeable batteries. A full battery charge takes up to 12 hours, but the batteries will always be fully charged if you run the system from the AC power supply when this is possible. Epson has provided a switch which allows you to turn off the hard drive in order to conserve power. You can set up the computer, for those times when you really need long battery life, to run just like a single floppy drive computer.

Epson has designed this machine so that you can easily work with a single floppy drive. Through the inclusion of a virtual drive feature, if you copy from one floppy drive to a second one that is not in the machine, the computer will prompt you to change disks.

Other options allow you to use the hard drive to load in application programs and then save data to the floppy drive. The user's guide outlines these different strategies for saving battery life. In addition to the included AC adapter, a cigarette lighter adapter ($29) is also available.

The backlit display provides a crisp image in almost any lighting conditions. If you use an external monitor, however, you are limited to CGA display quality. While this is adequate for some graphics applications, I find it a bit tedious for text. The instructions advise you to keep the display only as bright as you need in order to prolong the life of the backlit element. Epson advises that after a time you may have to replace this element ($99), and provides detailed instructions for doing this yourself.

The setup program has provisions for a number of energy-saving options, like turning off the backlight of the display after a period of inactivity. The default is two minutes, but you can reset this to any number that feels comfortable—especially if you do not use the machine primarily as a battery-powered unit.

The keyboard for the Epson Equity LT is a strong point as well as a weakness for me. On the plus side is the fact that it is a full-size keyboard with a complete layout, including a separate numeric keypad. The more computers I try, the more I become certain that I really don't like embedded numeric keys. While they do get the job done, they require a whole new set of reflexes that I simply don't want to develop. The use of an additional key to get home, end, page up and page down proves to be too cumbersome for me.

The Epson, fortunately, does not make this demand. The layout of the keyboard is pretty much all one could ask for. Ten function keys are placed across the top of the keyboard and LED indicators signal the status of the Num Lock, Caps Lock, and Scroll Lock keys.

So what is so bad? Simply that I can't type at my normal speed with accuracy. I know this is personal, and perhaps if I went back to typing school, I could learn to master this keyboard, but the fact is that I don't like the feel of the keys. No amount of objective analysis tells me anything other than that this is a well-laid-out keyboard with all of the little goodies I demand, including bumps to indicate the **j** and **k** keys.

There are a number of accessories available for the LT. They offer a standard 1200 baud modem ($299). It is a Hayes-compatible unit, which means it will work flawlessly with almost any software you buy. It has an audible speaker, one of the things I have come to rely on because of the application software I use in connection with a modem.

Epson has a handsome canvas carrying case ($49) available for this computer. It has room inside for the machine plus the power supply. There are also several other smaller pouches that will accommodate the user's manual. There is a large compartment on the outside that's spacious enough for a portable printer or cables, disks or even an optional disk drive. The whole case can either be carried by its carrying handle or over the shoulder with the provided strap.

One accessory that is missing from the list is a math coprocessor.

Conclusions

The Epson Equity LT doesn't make any home runs, but it is quite adequate as a plain dependable unit that will perform flawlessly if it has the features you need. Epson is known for quality, and this computer is no exception. (Epson Equity LT $1948-$2998; Epson America Inc., 23530 Hawthorne Blvd., Torrance, CA 90505; 213/373-9511.) ■

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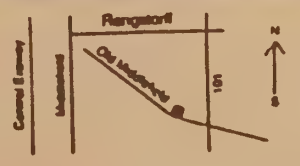

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Adobe Streamline: Auto-trace For Mac And PC

By Lenny Bailes

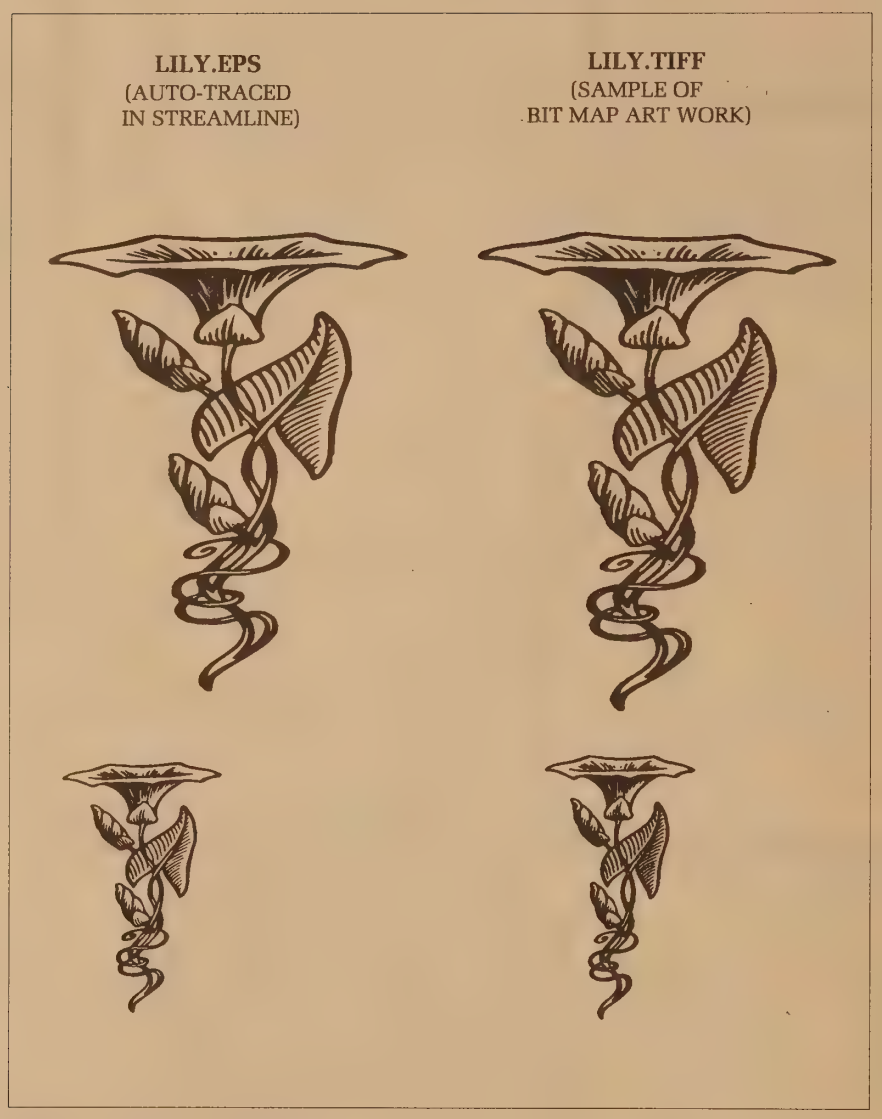

Figure 1: Lilies—Traced and TIFF versions of Adobe sample art.

Since Adobe *Illustrator* and Aldus *FreeHand* are both equipped with auto-trace functions in their current versions, you might wonder what the advantage is in spending $395 for a program which does nothing but trace artwork. But as you might expect, since Adobe *Streamline* has only this capability, it does the job in a slightly more sophisticated way than other graphics programs which include auto-trace capability.

The idea behind *Streamline* is that you might want to scan some artwork from paper and then import it into *Illustrator '88* to be resized, stylized or otherwise edited. You would then be able to take advantage of PostScript's ability to convert rough lines into smooth bezier curves. *Streamline* allows direct conversion of black and white bitmaps into PostScript files. The resulting images are more suitable for use in logos, poster icons and technical diagrams. Because PostScript artwork is object-oriented, the whole or portions of the whole can be manipulated without degradation of the image. If you scan in a map, you can convert it and change the course of roads or rivers with a click of the mouse.

Streamline On The Mac

Streamline for the Mac requires System 4.2 or higher and an SE, SE/30 or member of the II family. It will run in one megabyte, but the manual recommends two for best performance.

Streamline will not do a satisfactory job of tracing all kinds of artwork. To begin with, only 1-bit pixel images are allowed; greyscales can't be read. Although the program will read dithered patterns and halftones, the manual emphasizes that best results are obtained with drawings containing clearly defined black and white areas.

Although the program will read dithered patterns and halftones, the manual emphasizes that best results are obtained with drawings containing clearly defined black and white areas.

Whereas *Illustrator*'s built-in auto-trace just looks for consecutive groups of "on" pixels and connects them in a path, *Streamline* has three tracing methods:

- **Outline**—Finds continuous groups of pixels and fills the interior region as black or white. Lines become filled paths, hollow circles become two superimposed fill areas (a white circle inside a black one). There are no stroked paths.
- **Centerline**—Finds the center of a string of connected pixels and makes a stroked path. The program assumes your picture is made up of distinct lines.
- **Centerline & Outline**—The two tracing methods are combined. *Streamline* looks for fat bands of pixels and identifies them as objects to be filled. Thin bands are traced as straight lines or curves.

You have the option of selecting any of these three methods to trace a particular illustration. You can also generate an extra *MacPaint* template of the artwork. Adobe provides sample graphics which illustrate the use of the three conversion algorithms. Multiple images can be converted in one session. When you click on a filename, a preview of the image appears scaled for either a 14" x 14" or 8" x 10" area. Motorola Format TIFF, Compressed TIFF, *MacPaint* and PICT files can be selected for input. The traced image can be saved for *Illustrator '88* or as a Preview Encapsulated PostScript file for other Mac or PC applications.

The manual illustrates the use of several fine-tuning controls. Lines of varying thickness can be traced uniformly or their weights can be averaged. Black and white areas can be reversed. A partial area of an image can be selected for conversion from the preview menu. Sensitivity to small groups of pixels (noise level) can be adjusted. Anchor point type can be varied to trace straight or curved lines or both. The tightness of the curves (tolerance) can be adjusted to reduce jaggies or preserve the outline of a shape.

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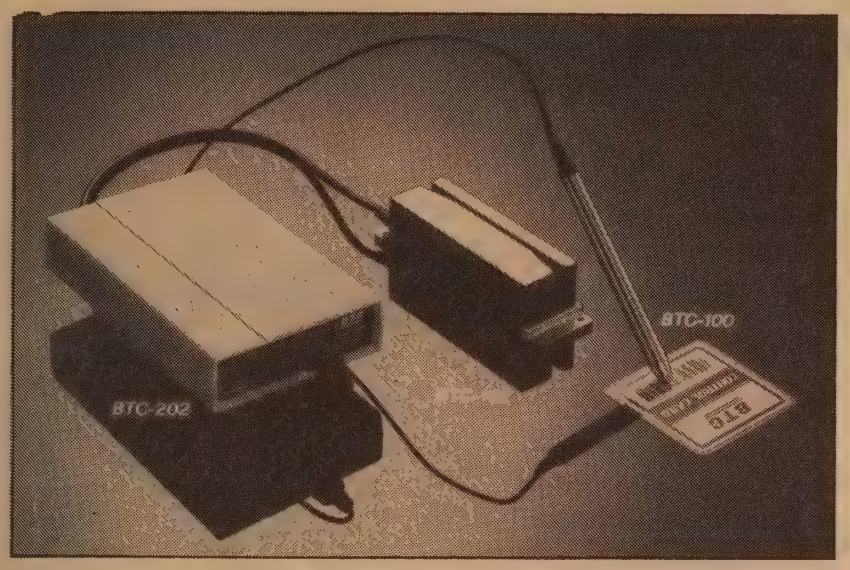

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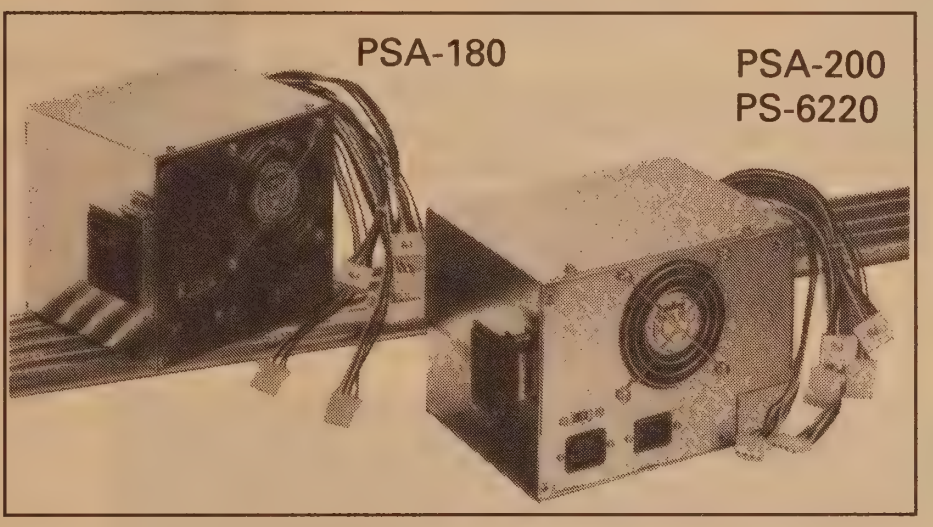

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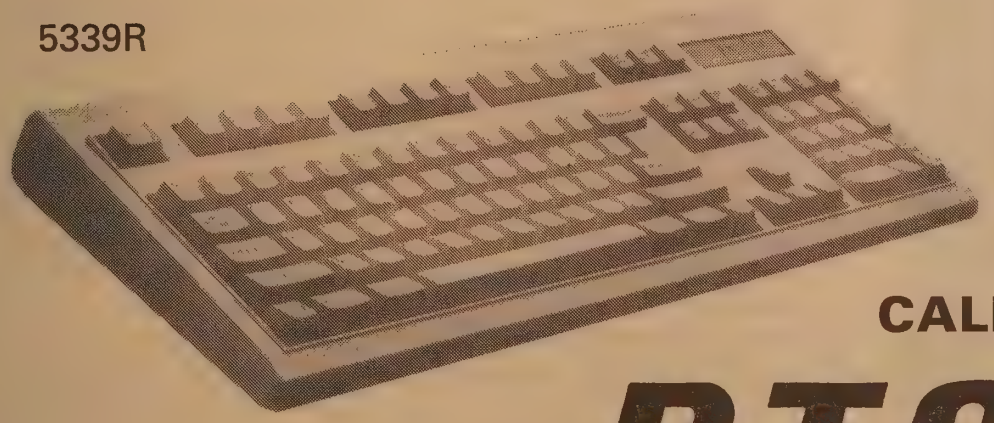

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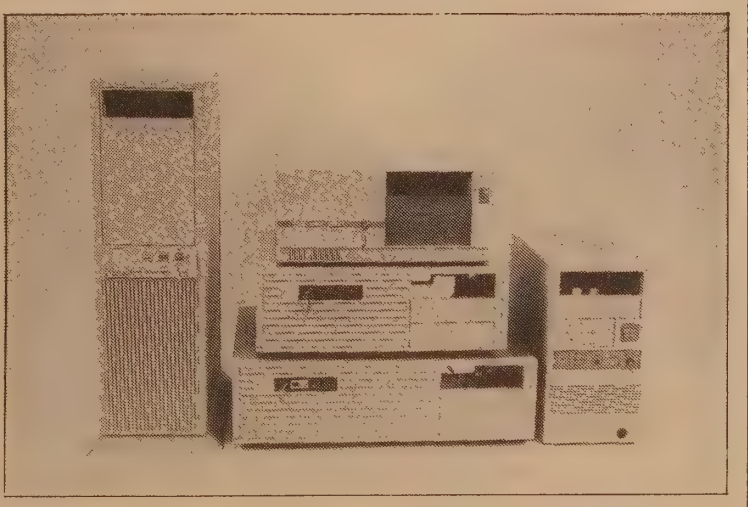

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Figure 2: Grass Roots Band—Musical logo I made out of traced T/Maker clip art.

How Well Does It Work?

I tried several tests on *Streamline*, using some of the sample TIFF images provided by Adobe, some clip art from T/Maker, a schematic diagram from *MacDraw*, and a scanned image in CompuServe GIF format.

The images provided by Adobe epitomize artwork that will trace most effectively. Light and dark areas can be defined by *Streamline* as simple paths. There is no difference between the images of Adobe's lily (Figure 1) in the traced and TIFF versions. You might ask yourself, why not just use the TIFF image and forego the necessity for *Streamline*? But with the PostScript lily, you could transplant a bud or lengthen the stem easily, if you had a mind to.

Turning to my other samples, one of the first things I discovered was that *Streamline* would not trace text elements. I fed in some schematic diagrams provided with *MacDraw* and also noted that circles and rectangles were only approximately traced. Any accompanying text descriptions disappeared. By contrast, the Drawover utility supplied with *Illustrator* made the same schematic into an almost 100%-faithful PostScript replica, including the text in the selected font. The moral is if you have artwork which has been produced in a vector format by a draw program, Drawover is what you should use to import it into Illustrator. Drawover will not work with bitmap files.

Be aware that the PICT format on the Mac is used to store both bitmap artwork (*SuperPaint* files, for example) and vector art (*MacDraw*, *Cricket Draw*). *Streamline* should be used with the bitmap art. *Streamline* will trace bitmap characters, it just won't reproduce text defined in *MacDraw*.

I created a musical logo (Figure 2) with bits of T/Maker clip art by tracing with *Streamline* and importing the results into *Illustrator '88*. Once the graphic elements were loaded into *Illustrator*, I added text by typing it in. This text can be manipulated in the usual *Illustrator* fashion.

The two versions of the Golden Gate Bridge in Figure 3 illustrate the importance of selecting the right tracing algorithm for the artwork you're working with. In this case, creating filled areas was better than creating stroked paths.

In general, the higher the resolution of the art to begin with (largest possible screen size), the better the traced PostScript file will turn out.

Just for fun, I tried tracing a CompuServe GIF scan of a popular cartoon character after changing it to *MacPaint* format. *Streamline* did the best it could, but when I tried to print the file I got two PostScript error messages: "Limitcheck" and "Offending command: Lineto." It turns out that in a complex image with extended continuous lines, the paths created by *Streamline* are too long to be handled by the memory in a 300 d.p.i. LaserWriter NTX (although the file did print on Kyocera's LaserWriter clone). Fortunately, if you have the latest version of *Illustrator '88* (1.83), you can change the default

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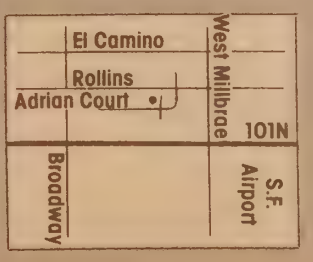

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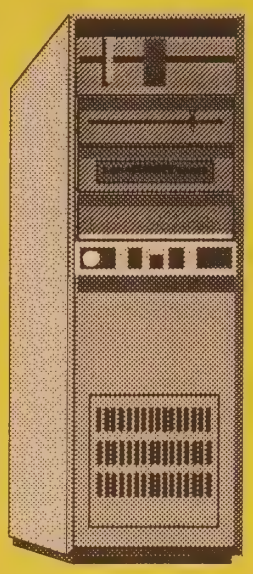

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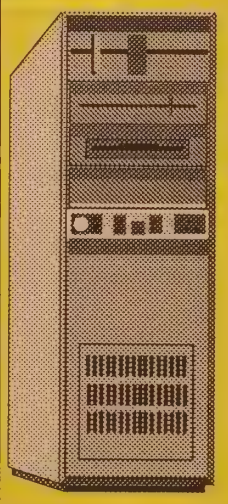

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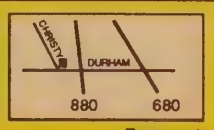

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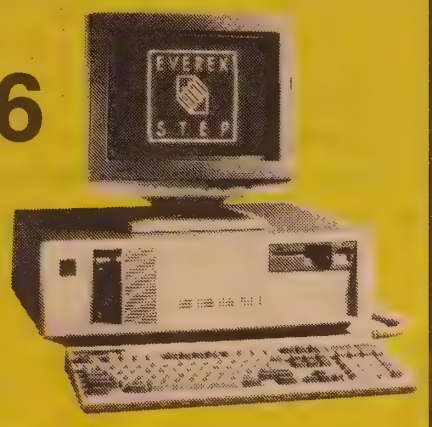

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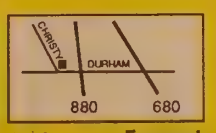

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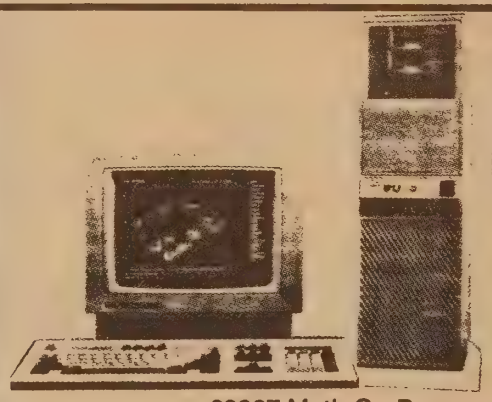

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resolution of the line paths upward from 300 or 1200 d.p.i. to 1500. As I understand what Adobe's technical support person told me, this causes the line paths to be broken up and allows the file to be printed. Users of earlier versions of *Illustrator* may be able to do the same thing manually with the scissors tool. (There is a note about this in the manual.)

If you import TIFF files from a PC for tracing in *Streamline*, you will have to resave them in a Mac application which handles TIFF before *Streamline* will read them. Adobe has a utility called FLIPTIFF available on CompuServe to do these conversions.

Streamline On The PC

Adobe has just released a PC-*Windows* version of *Streamline* which is basically a twin of the Mac version. PC *Streamline* accepts input bitmaps from *PC Paintbrush*, as well as TIFF and *MacPaint*. It will run under *Windows* version 2.03 and above, and Adobe recommends you have one megabyte of expanded memory for optimum performance. The manual says, "*Streamline* does not require expanded memory to convert images that are smaller than 20 square inches (4" x 5") at 300 dpi; however, using expanded memory significantly decreases the image conversion time."

Windows Streamline provides the same clip art samples as the Mac version, with some additional files thrown in. All of the tracing setup commands are the same, but you have the added option of saving the traced artwork to *Micrografx Designer* (.DRW) format. The other two output options, *Illustrator* 1.0 (.AI) and PC Encapsulated Postscript (.EPS), correspond to the Mac "no preview" and "PC preview" options.

Windows Streamline has no provision for saving a "Mac preview" .EPS file; however, if you have *The Curator*, or *Illustrator* on the Mac, you can make a formal conversion there to "Mac preview," changing the TIFF screen image for a PICT file. (I've found in personal experimentation that Mac *PageMaker* doesn't seem to care about this, anyway. "PC preview" EPS files are displayed and printed by Mac *PageMaker* without needing to be converted.)

As far as I can see, the results obtained when using PC *Streamline* are the same as with its Mac cousin. The *Windows* version of *Illustrator* is more likely to run out of memory and be unable to edit the finished result with large files. I ported one traced

ORIGINAL MACPAINT CLIP ART

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CENTERLINE AND OUTLINE

Figure 3: Golden Gate Bridge—comparison between two Streamline Trace methods and the original MacPaint file.

image that was 150 K back to the Mac and was able to open it in Mac *Illustrator '88* with only one megabyte on the system. PC *Illustrator* 1.0, running with 2 Mb of EMS, was unable to open the file, because *Windows 286* allo-

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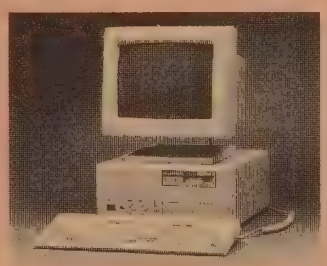

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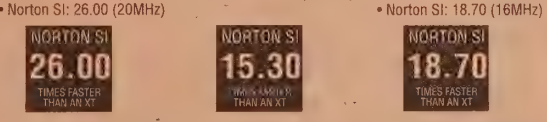

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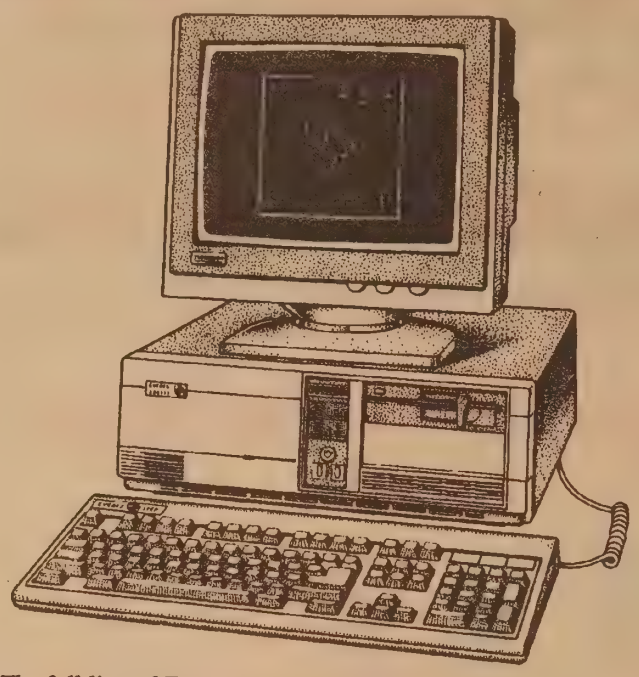

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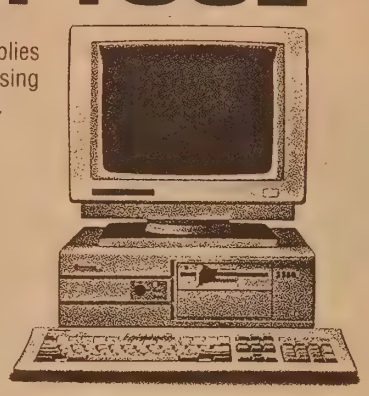

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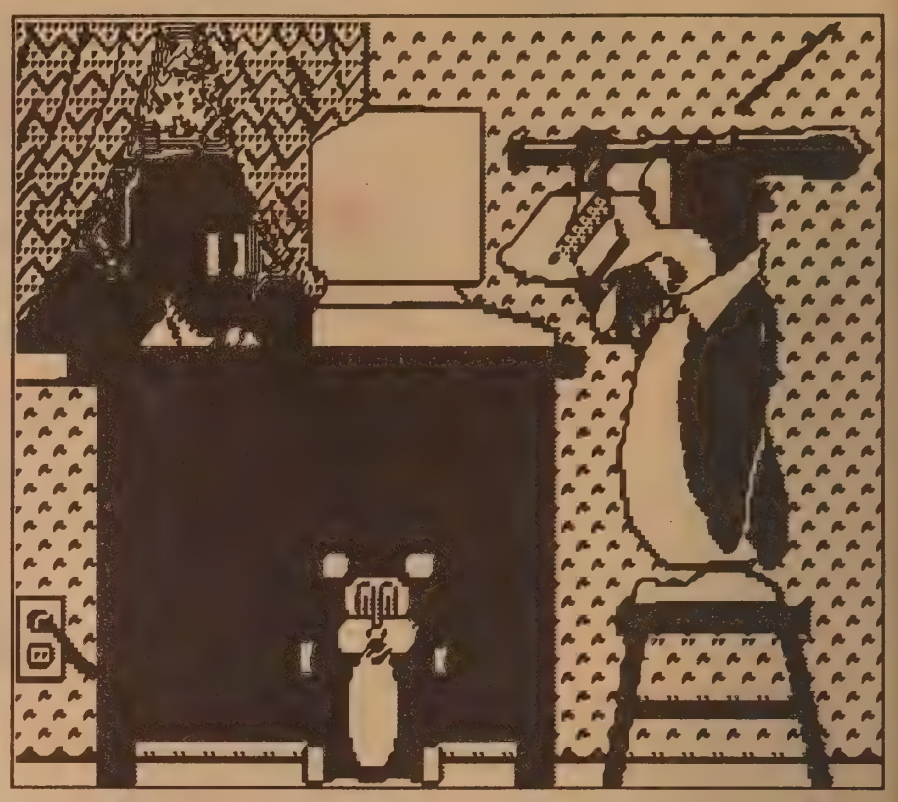

Figure 4: Opus the Penguin destroying a computer: A CompuServe GIF file which I converted to MacPaint and traced, then spent a month learning why it wouldn't print and how to fix it so it would.

cates only 450 K of conventional memory to its applications.

Bugs

Traced images from the PC program are supposed to be usable with Xerox *Ventura Publisher*, as well as PC *PageMaker*, *COREL DRAW!* and *Micrografx Designer*. A small oversight in the "PC preview" format makes the finished PC *Streamline* files unusable in Xerox *Ventura Publisher*. Adobe is aware of this problem and will be sending a patched version of the program shortly to all registered users.

Remedy: Until you get Adobe's patch, to use PC *Streamline*'s output with *Ventura*, save it in the .AI format with no preview, or import a "Preview" *Streamline* file into PC *Illustrator* and resave it. (I found no problem loading PC *Streamline*'s files directly into *WordPerfect* 5.0 or PC *PageMaker*.)

Like its Mac cousin, *Windows Streamline* has difficulty reading TIFF files created by some PC programs. I found that TIFFs created by *Hijaak* and *Optiks* would lock *Streamline* up in the conversion process.

Remedy: Both *Optiks* and *Hijaak* will let you convert TIFFs to PC Paintbrush format. So far, *Streamline* appears to handle all one-bit variants of the *PC Paintbrush* (.PCX) format without crashing.

Summary

Some improvements which I think might be helpful for the next versions of *Streamline* on both platforms are:

- Allow the user to save the various settings to the program, rather than having to reset them each time *Streamline* is loaded.
- *Streamline* should update the PICT (or TIFF) preview image in the file after tracing. As is, *Illustrator* will rebuild the file and show a close representation of the PostScript on the screen, but if you place *Streamline*'s Encapsulated PostScript files in *PageMaker*, you see the screen image of the original bitmap. What comes out of the printer may be considerably different.

Streamline isn't perfect; it won't produce results as good-looking as what a trained graphic artist can get in tracing a drawing manually. But *Streamline* can be a time-saver for that graphic artist by automatically handling a large portion of a drawing, letting the artist fill in fine details. (Adobe *Streamline*, Mac and PC versions $395, from Adobe Systems, Incorporated, 1585 Charleston Road, P.O. Box 7900, Mountain View, California 94039; 415/961-4400.) ■

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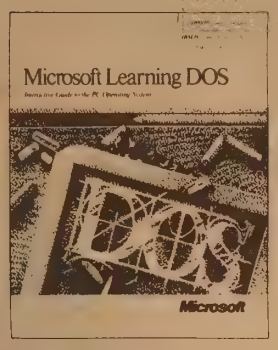

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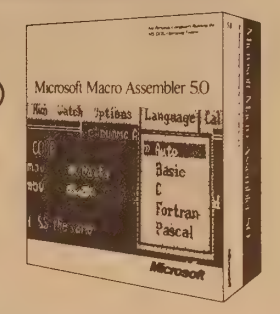

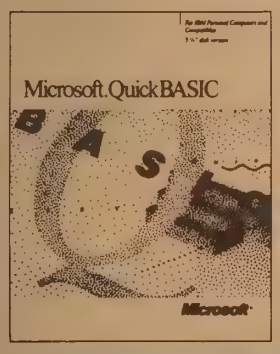

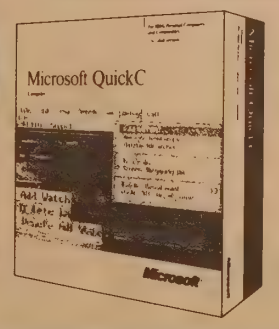

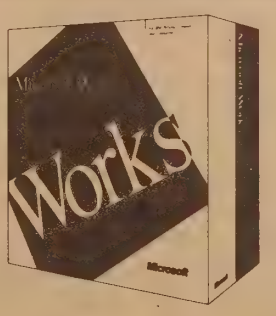

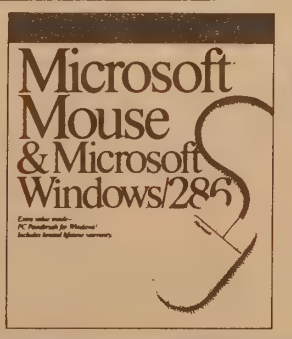

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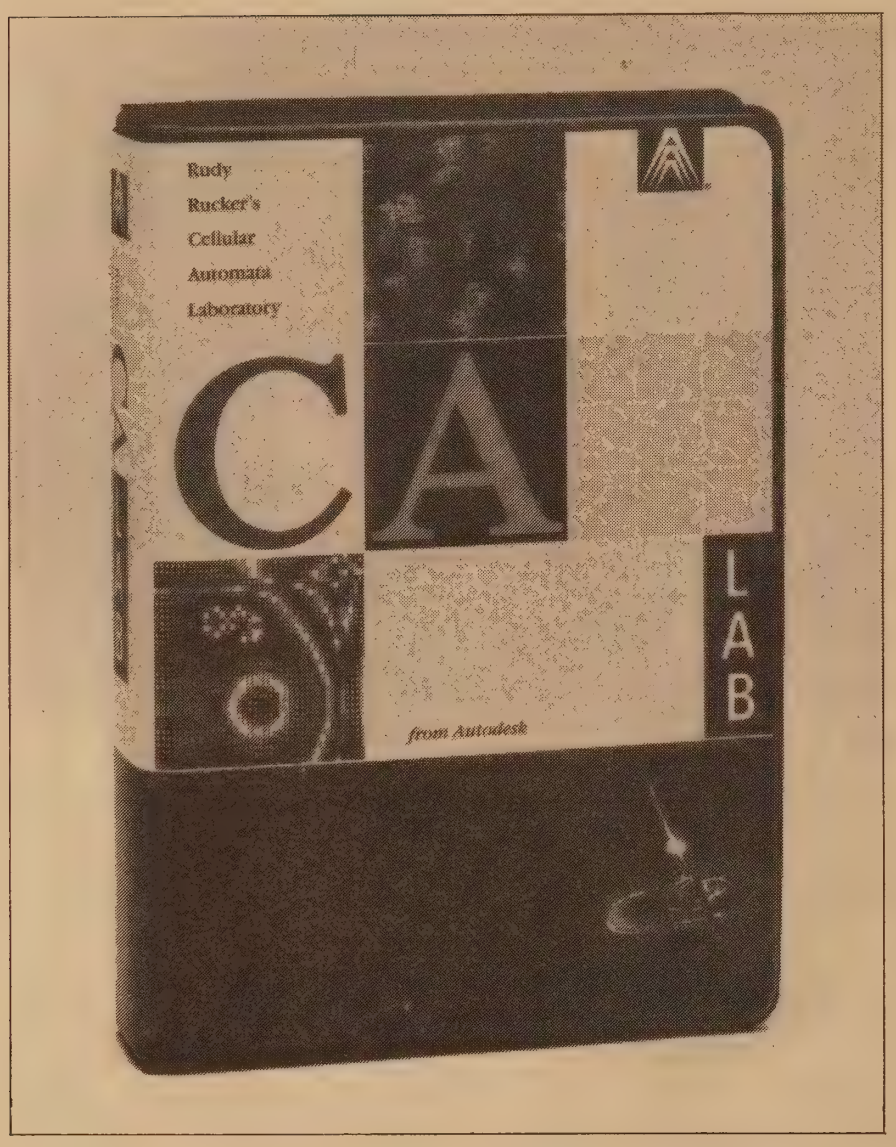
Autodesk's CA Lab

This Christmas, Give The Gift Of Computer Life

By Birrell Walsh



I started the program and found a fluid, melting pattern forming and dissolving on my screen. The manual suggests tapping the "g" key to "get a new rule," and I did. The pattern splashed and re-formed, with bubbles arising and streaming off to one side. Another "g," and I seemed to be looking into the center of a hearth-fire. Change again: the fire died into ghosts, and the ghosts fled with flickering edges off the screen. A last change created a spring of randomness from which creatures crawled to run around the monitor.

What is this thing? Is it a light show on a disk? Yes. It is also a toy, and a serious research tool. It is called *CA Lab* (for IBM and compatible computers, with CGA, EGA, VGA, from Autodesk, $59.95; call 1-800-525-2763 to purchase it).

It is one of the most intriguing programs to enter the market in years, because it is both beautiful and thought-provoking. The show on the screen is the output of a program designed to explore "cellular automata."

Cellular Automata

Cellular automata are dumb little creatures that change depending on only two things: the condition of their neighbors and their own recent history. In computerized cellular automata, a cell is usually either one character or one pixel on the screen. Because each cell influences its neighbors, a change in one cell causes changes in those around it.

The way in which a cell responds to the states of its neighbors, and its own history, is called a "rule" in the CA business. In one CA system the rule is:

1. Cells are either on or off.
2. Each cell has eight neighbors, four that adjoin it and four on the diagonals. A cell is not a neighbor to itself.
3. If the number of neighbors that are on is 0,1,4,5,6,7, or 8, turn off.
4. If two neighbors are on, stay as you are: stay on if you are now on, stay off if you are now off.
5. If three neighbors are on, turn on no matter what your present state.

Who would think that this simple five-part rule would create a complex system? It does, though: these are the rules for the game called *Life*, in which strange creatures scuttle across the screen. They meet, battle, mate and reproduce, all because each of their cells follows this rule. The rule is one of 10-to-the-176th-power rules you can explore in the laboratory. Changing the rules is how you play in the *CA Lab*. You can save the ones you like, or load interesting rules that come with the program.

Changes propagate away from each cell, and the interactions generate patterns. The curious thing is that

What at first seems to be a light show and a toy is in fact a serious research tool. That is the intention of the authors. Rudy Rucker is a mathematician, a popularizer of mathematics, and a science fiction writer of the CyberPunk recension. John Walker is the co-author of AutoCAD and an exploratory programmer.

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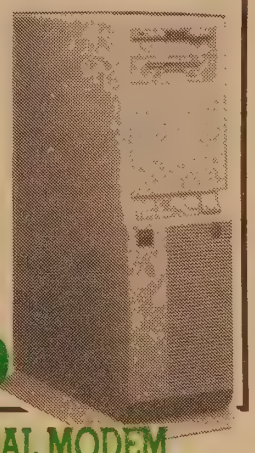

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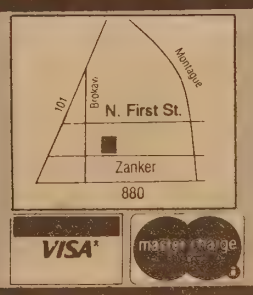

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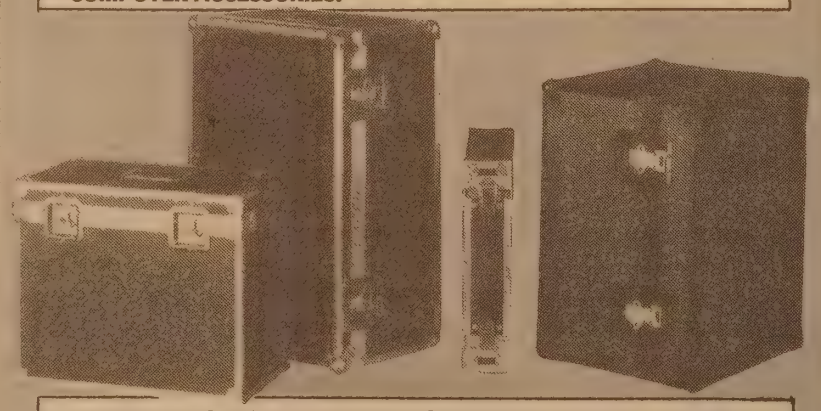

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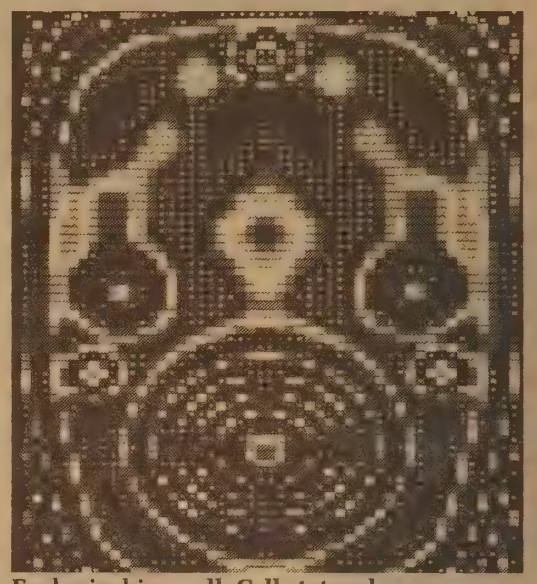

Each pixel is a cell. Cell states show as different colors. You can therefore see many states on the screen, as opposed to the two ("on" and "off") used in the Life program.

these patterns are familiar to us: we can see growth and decay that looks very much like the pulsing rise and fall of populations, storms, and empires. We see crowd behavior, which is called "schooling" in fish, "flocking" in birds, and "the marketplace" among us humans. We see systems that seem to emit and respond to messages. Most strangely, we see patterns arise and then stabilize. It is possible to build ridges, mountains, plant-like and animal forms.

The secret in CA systems is that the fluid, busy screen is rigidly determined by its rules. The characteristic of much flowing from little might be called "algorithmic generativity." Ancient philosphers would have said that each rule system is a *logos* from which all the patterns flow.

As you look at the patterns generated by the very simple rules followed by the cellular automata, you can't help wondering, "Is this how forms are generated in the world?" A number of researchers think so. People are using cellular automata to study vision because we know that the retina acts like the systems you can build in *CA Lab*. In the middle of the manual is a bibliography of 31 academic references in biology, chemistry, physics, computer science, and image processing. This is a tiny fraction of the work being done currently, but it indicates that what at first seems to be a light show and a toy is in fact a serious research tool.

That is the intention of the authors. Rudy Rucker is a mathematician, a popularizer of mathematics, and a science fiction writer of the CyberPunk recension. John Walker is the co-author of *AutoCAD* and an exploratory programmer. They have created an affordable Laboratory where anyone can explore how cells, and their interactions according to un-complex rules, can lead to remarkable patterns and structures.

The package includes Walker's *CA* program, Rucker's *RC* program, support files for them, and a set of smaller systems. *CA* requires a color system—CGA, EGA or VGA. It makes the liquid light shows according to a wild variety of possible rules, so that you can see the large-scale effects of local rules and interactions. Each pixel is a cell. Cell states show as different colors. You can therefore see many states on the screen, as opposed to the two ("on" and "off") used in the *Life* program. The better your graphics board, the better the show.

In Rucker's *RC* program (which is the only one which works on a monochrome system), cells are one character rather than one pixel. The scale is much coarser, but the action is easier to follow. *RC* lets you design and try out rules on a small scale: you can tinker with them and watch the result in slow motion and large magnification before moving the result to *CA*. *RC* is a tiny 12 K program that you can carry on any disk. (Don't let the boss catch you!)

There are three-dimensional movies made with CA rules by John Walker. You get, as well, a particularly lifelike program which visibly models reproduction, and another which generates audible, rather than visible, CA patterns. Interfaces for BASIC, Pascal and C are included so that programmers can link *CA Lab*'s kernel to their own work.

With the programs comes a superb manual. It is fun to read; it entices the casual browser to become an experimenter and then a developer. It is an introduction to cellular automata in theory as well as practice.

CA Lab is more than practical. *CA Lab* reminds me of the "Bead Game" of Hermann Hesse's *Magister Ludi*, and the Ler Game of M.A. Foster's *Game Players of Zan*. It is a sorcerer's laboratory on the very edge of the known, an invitation to design and test artificial life. Rucker and Walker are good company, and wizards. If you want a Christmas present for an inquisitive, playful computer person, look no further. ■

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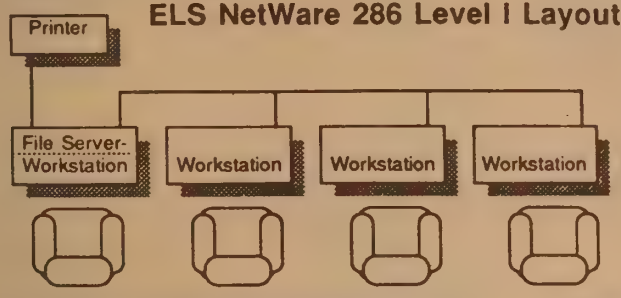

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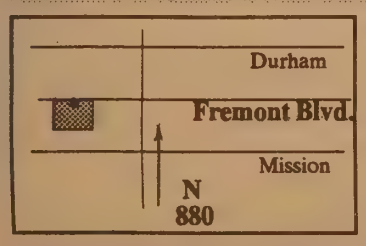

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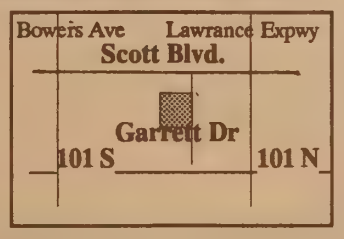

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-BIG NAMES & BIG SELECTION

Authorized Advanced Products Dealer

PS/2 30-286

• 10 Mhz 80286 processor • 1 MB RAM to 16MB RAM • 1.44 MB floppy drive • VGA graphics on board

Berkeley/San Jose only. Monitor extra

1299.

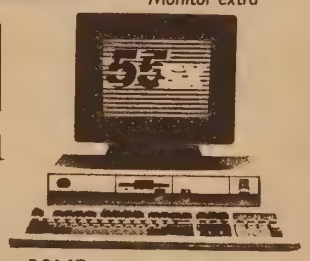
PS/2 50Z

• 80286 • 0 wait state - FAST! • 1.44 high density drive • MCA BUS • 30 MB

2295.

Monitor extra

Over $500 worth of FREE SOFTWARE w/purchase of PS/2 25, 30, 50, or 55 SX



PS/2 55SX-31

• 80386SX 16Mhz processor • VGA on board • 2MB RAM expandable to 16MB • 30MB IBM hard drive

2499.*

**After manf. rebate. Monitor extra*

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WHOLE EARTH COMPUTER SYSTEMS

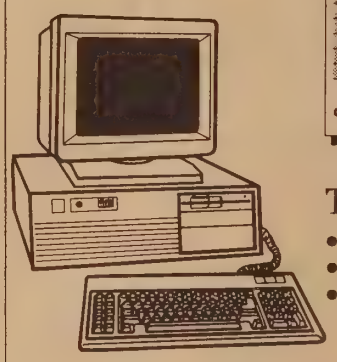
PRICE REDUCTION!!

Super 386/20Mhz

• 1 MB RAM • 1.2 MB FD, 101 keyboard • True 20Mhz CPU • 1:1 hard drive controller

Lowest Price Ever **1299.**

Monitor extra



WHOLE EARTH COMPUTER SYSTEMS

Turbo 286

• Zero wait state • 1.2 MB FD • 8 expansion slots

Lowest Price Ever **749.**

Monitor extra

COMPAQ SLT/286

Model 20

• 16-bit 80C286 12Mhz processor • 640K RAM expandable to 3.6 MB 1.44 MB floppy/20 MB HD

3799.

COMPAQ DESKPRO 386s

Model 1

Built around the revolutionary 386SX processor, the DP386S delivers 386 performance at a non-386 price. VGA graphics are built in. 16Mhz CPU speed.

Monitor extra **2399.**

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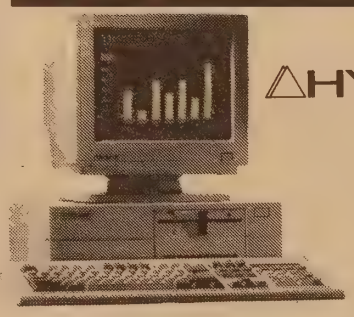
MORE NAMES & MORE SELECTION

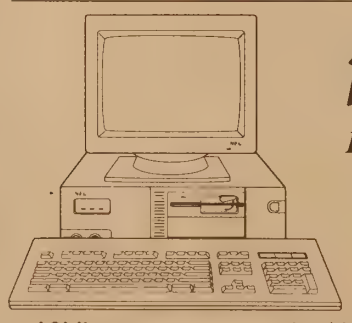


HYUNDAI

Hyundai XT Compatible

• 640K RAM • IFD 360K • DOS, I/O • Dual mode graphics card

Monitor extra **499.**

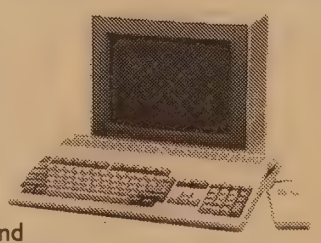


NEC *PowerMate® 286*

• 10Mhz processing speed • Up to 16MB main memory • 4 full-size expansion slots • Standard MS-DOS® operating system

Monitor extra **879.**

COMMODORE AMIGA 500



Whole Earth has brought in the Amiga computer by Commodore, and already has become the Bay Area's best Amiga dealer. Come see this amazing computer, on display in all of our locations.

• Excellent color graphics - 4096 colors • Includes mouse • 68000 Motorola CPU powerful!

Monitor not included **549.**

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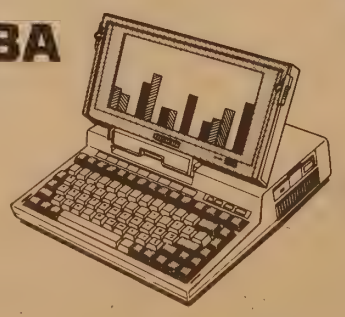
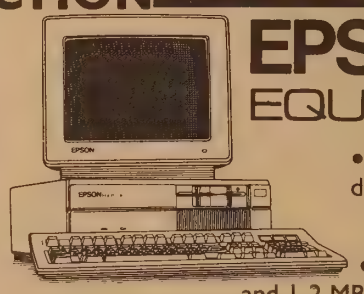


T1000 Laptop

• Weighs less than 7 lbs. • Operating system built into ROM • 720K floppy drive

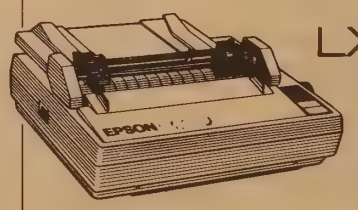
629.



EPSON® EQUITY™ II+

• 20 MB hard drive • Powerful 80286, 12Mhz • 3.3 DOS • 640K RAM and 1.2 MB floppy • Built-in serial and parallel port

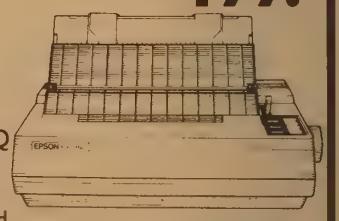
Monitor & card extra **1499.**



LX-810

• With SmartPark™ • 200 CPS draft • SelecType control panel

199.



FX-850

• 9 pin dot matrix • 264 draft 54 NLQ • 80 column • Push tractor, paper park for single sheet feed optional single bin sheet feed and envelope feed

399.

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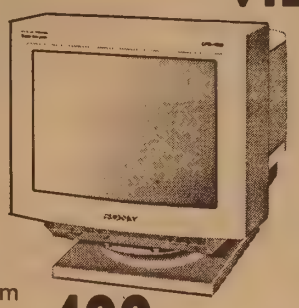
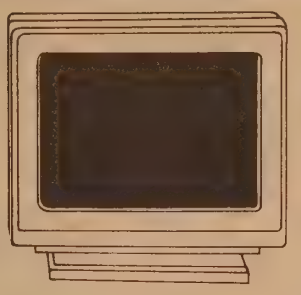


1320 VGA Monitor

- VGA color monitor
- Analog input • .25mm Aperture Grille

499.

NEC MultiSync 3D



The NEC 3D is one of the best multiscan monitors made.
1024 x 768K resolution means you can use sophisticated Super VGA software and hardware with this screen.

649.

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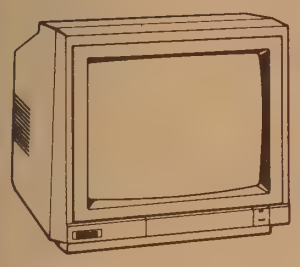

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- EGA monitor
- Perfect for home or business use
- CGA compatible
- Famous Magnavox quality

Get into high resolution color at a low price!

399.

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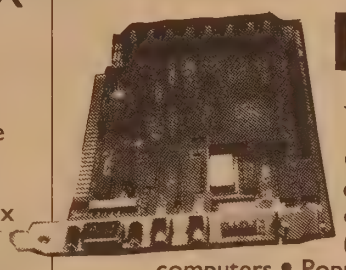

VGA Plus 16

• 256K RAM • Fully compatible VGA output • For 16 bit (standard bus) computers • Popular drivers for super VGA applications

329.

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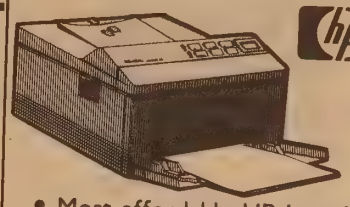
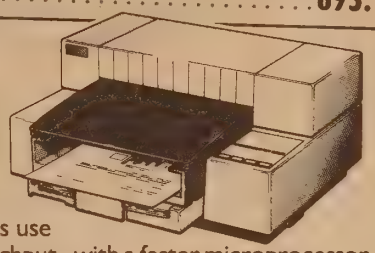


Laser Jet IIP Printer

• Most affordable HP LaserJet printer • Publication-quality output • Same wide range of HP LaserJet software and font support • Backed by HP's reputation for reliability and support

995.

Deskwriter . . . . . **895.**

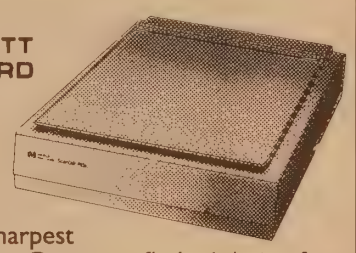


Deskjet Plus Printer

• Ideal for office/business use • Faster throughput - with a faster microprocessor • Built-in landscape now contains four fonts that can be selected through the front panel • Now offering 10 internal fonts up to 30 point size

749.

HEWLETT PACKARD



ScanJet Plus

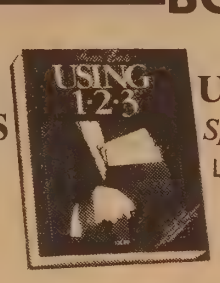
• 256 levels of gray for the sharpest image resolution • Compact, flatbed design for bound and loose documents • Interface kits available for both PC and Macintosh

1295.

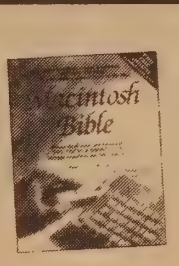
Interface kits for PC/Mac . . . . . **459.**

BOOKS

Running MS DOS
List $22.95
19.95



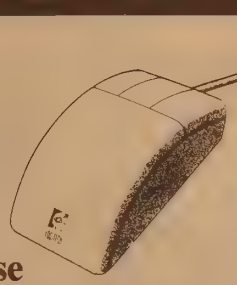
Using 1-2-3
Special Edition
List $24.95
21.95



Macinotosh Bible
List $28.
24.95

ACCESSORIES

LOGITECH



Logitech Mouse

Latest version! redesigned ergonomic case for easy and comfortable use. Serial version plugs into your CPU's serial port; bus version has special user-installable interface card. Three button design is great for a host of CAD and scientific applications.

99.

Trackmate

The world's first true disc drive care system. The Trackmate system assures confident user friendly care or your delicate drive.

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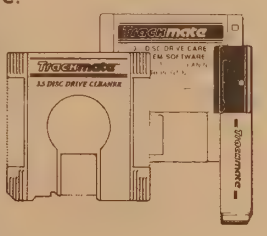
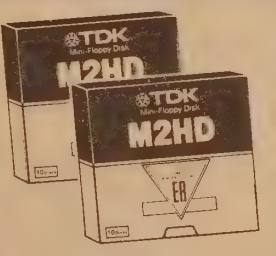
IBM PC 3½"	39.95
IBM at 5¼"	44.95
Macintosh	39.95



TDK



Floppies

Electron Beam cured binder produces stronger, more permanent bonding of magnetic particles.

5¼" Floppy Disk DS/DD	3½" Floppy Disk DS/DD
ea. 49¢	ea. 89¢

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PC Tools Delux/Mac . . . . . **64.**

Reader Rabbit . . . . . **44.**

Math Rabbitt . . . . . **44.**

Dark Castle . . . . . **33.**

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Microsoft Works 2.0 (new) . . . . **119.**

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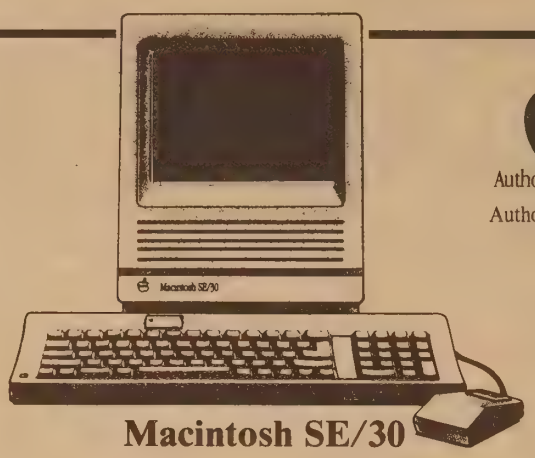

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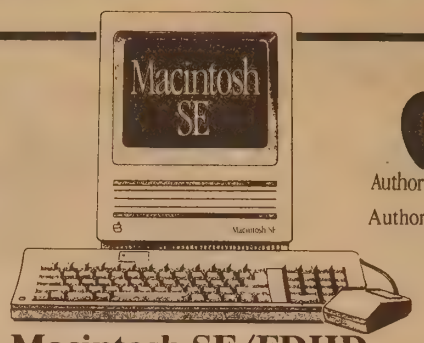
Macintosh SE/30

The Macintosh SE/30 is the highest performance compact Macintosh. This computer combines the original Macintosh design with the latest microprocessor technology. The Macintosh SE/30 includes the Apple FDHD SuperDrive, 1 MB RAM, Multifinder and Hypercard. M5392

*After rebate Keyboard extra **2849.***



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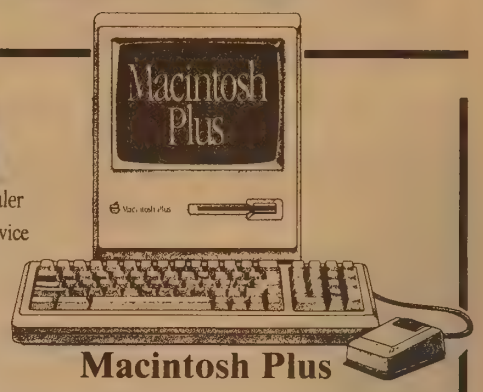
Macintosh SE/FDHD

The Macintosh SE offers faster access to files and applications, and an expansion slot. The Macintosh SE includes two Apple FDHD SuperDrives, 1 MB RAM, Multifinder and HyperCard. M0029LL/A

*After rebate Keyboard extra **1949.***



Macintosh Plus

The Macintosh Plus is the most affordable Macintosh computer. Perfect for the small business and student looking to organize essential data. Comes complete w/1-800K drive, 1MB RAM, keyboard, mouse, MultiFinder and HyperCard. M5880 *After rebate **995.***

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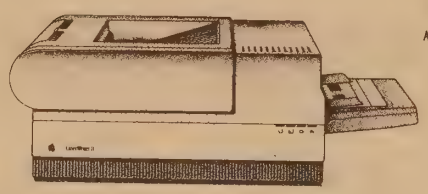
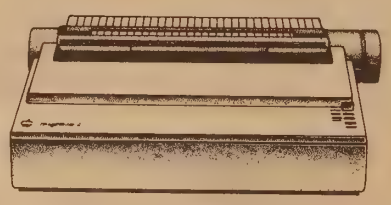
PRINTERS



Authorized Dealer

Laserwriter II NT

With 35 internal fonts, 2 MB RAM, and Postscript, the Laserwriter II NT yields professional quality documents quickly and easily. **3495.**



Imagewriter II

Whether you're printing your novel or a note to Mom and Dad, the Apple ImageWriter fills the bill. It's easy to hook up to any Apple Computer system. **469.**

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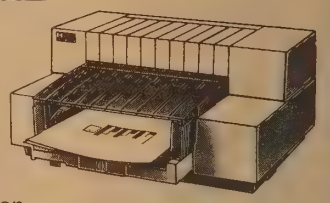

DeskWriter Printer

The new Hewlett-Packard DeskWriter printer brings laser-like quality printing to the Macintosh line of computers at an affordable price. This printer is easy to install and works seamlessly with your Macintosh equipment. **995.**

VIDEO

Lapis

DisplayServer SE

Let your Macintosh SE "talk" to standard 14" monochrome monitors! Fits in SE's slot. Serves most VGA and multiscanning monitors, too! Increases work space and lets you work "across" the standard Mac screen and the add-on monitor. **379.**

radius

Full Page Display w/Interface Card

For Macintosh

Perfect for desktop publishing, CAD, graphic artists, and many other business and art applications.

ON DISPLAY

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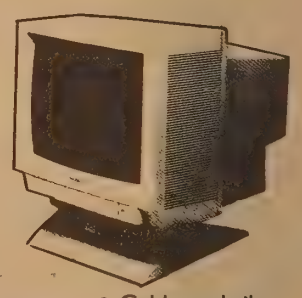


9CM080

• Excellent hi-resolution graphics when used with Macintosh II graphics system • Cable and tilt-swivel included • Magnovox means great value and quality **599.**

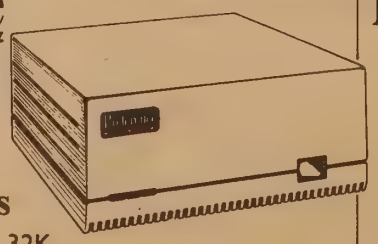
DRIVES

SUPERMAC TECHNOLOGY

Hard Drives XP30

• High-speed SCSI external drive • 30 MB storage capacity • Includes cable, SuperSpool and other utility software • Easy to set up **649.**

Preference™ WESTERN DIGITAL

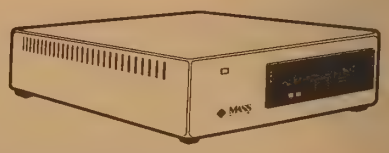


Western Digital Hard Drives

• New for '89! • 32K of caching and 1:1 interleave ensures the highest possible performance • The Preference Series drives are small, sleek and perfect for your Macintosh Plus/SE/II system • 20 MB version **549.**

DATA PAK

MASS microsystems POWER2 EXPAND!



Mass Microsystems Data Pak

• 44MB removable Macintosh hard drive
• Sophisticated utility software
• Fast access time **1399.**

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We have the best prices—we guarantee that we will not be undersold! Our professional sales staff is the best around. We have the widest selection of high technology goods—we're authorized to sell IBM, COMPAQ, APPLE, and much, much more! Come in and see our selection of office products. We have superior service, with fast turn-around time. Best of all, we want your business! So if you're looking for a computer or peripheral, if you're ready to buy, or if you just need information, there's only one place to go in the Bay Area.

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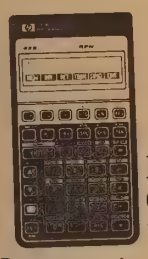

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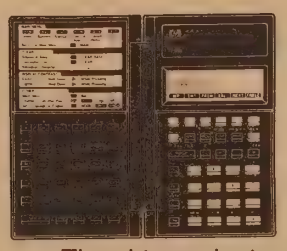

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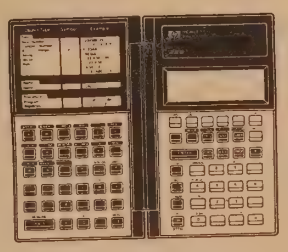

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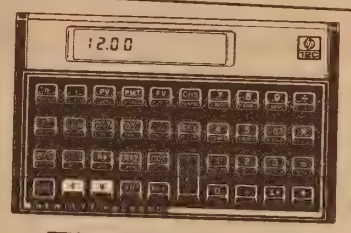

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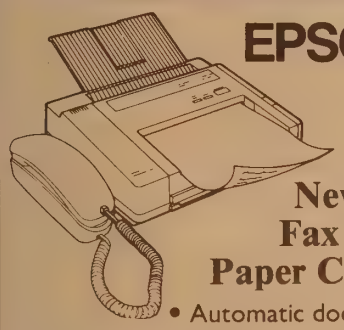

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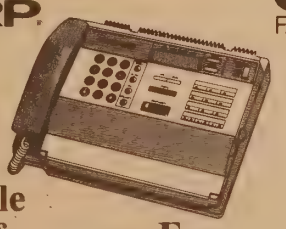

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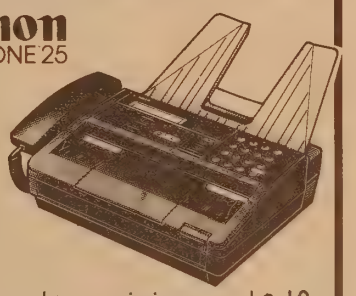

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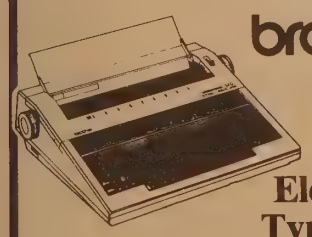

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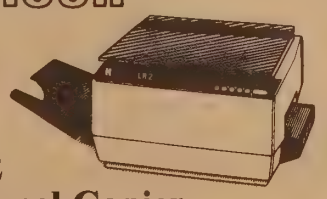

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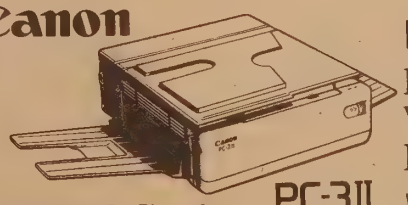

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PC POWER

PostScript On Your LaserJet II

By Woody Liswood

PostScript envy is defined as having a Hewlett-Packard LaserJet II, but wanting a 35-font, $7,000-or-more PostScript printer for your fancy graphics and other documents.

If you suffer from PostScript envy, there is a cure. Two, in fact.

First, and cheapest, is the Pacific Data Products PostScript Cartridge. This $699 Cartridge slips right into your HP LJ II and turns it into a full-fledged PostScript machine. The only difference you will find between it and the other PostScript machines or solutions is speed. The PDP Cartridge is just a little (or a lot, depending on the actual page you are printing) slower. On the other hand, for $700 rather than $7000, you do get PostScript. (That $700 is somewhat misleading—you must have a minimum of 2 Mb of additional memory inserted into the LJ for the PDP Cartridge to work. That may be another few hundred dollars.)

Second, and more expensive, is the Princeton board set. One board goes into the LaserJet and the other in your PC. This set now becomes LPT2 with the original LJ remaining as LPT1. This is a rather convenient setup, since you can use either whenever you want just by redirecting your output appropriately.

I ran many test prints with the Cartridge and with the Princeton PostScript board combination. There was absolutely *no* difference in the output between the two other than

If you suffer from PostScript envy, there is a cure.

speed. Of course, the Princeton board for the LJ II costs about $3,000—and prints 20 or so times faster than the Cartridge. Which one is for you is a matter of time and money. Both appear to provide complete emulations of the Apple LaserWriter printer.

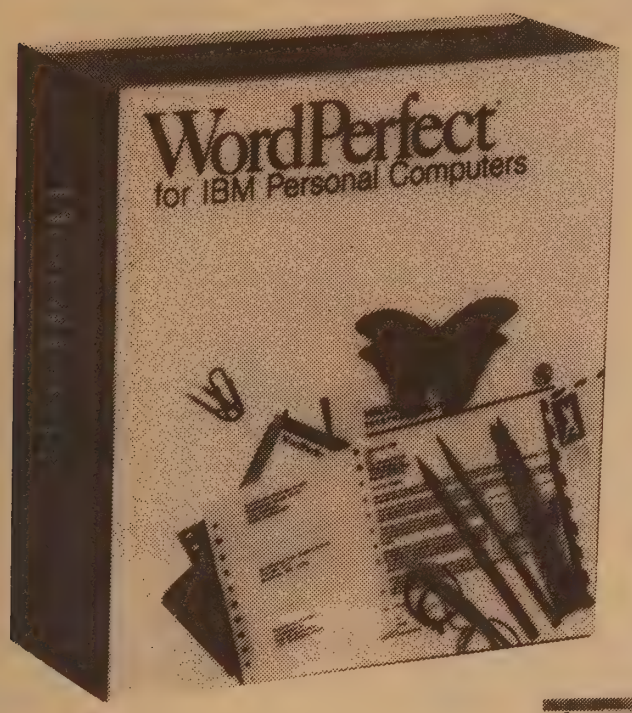
The PDP Cartridge forces the LaserJet into becoming a PostScript printer. To switch back to the LJ mode, you must send a specific command sequence to the Cartridge. There are two small BAT files accompanying the Cartridge so that you can switch between modes any time you're in DOS. I let the printer contain both the PostScript Cartridge and the PDP 25 in One Cartridge. For most programs, I just install for a PostScript printer. However, I can still use the 25-1 Cartridge as needed without looking all around and setting it up. (One interesting feature of the Cartridge is that it displays how large the file is as it receives it. I have sent graphic-based pages to the printer which turned out to be over 250 K in PostScript commands.)

With the Princeton board, I leave the 25-1 Cartridge in as LPT1 and the PostScript printer as LPT2, and have, in effect, two printers active. I have had no problems with this combination.

The only place I experienced any problems, with either setup, is under *Windows*. Since *Windows* will only allow a single printer assigned to a single port, if you use the PDP Cartridge, you assign it to LPT1, and you have a PostScript printer. If you also want to use the HP LJ in native mode, you must first go to the control panel, deselect the PostScript printer on LPT1, connect the HP LJ to LPT1, then reinstall the software to recognize that you have changed printers connected to LPT1. This is much easier with the Princeton board.

The real problem under *Windows* is printing speed. With long documents, both boards time out, and you get continuous timeout dialog boxes. It is a significant problem with the Cartridge, since the Cartridge is significantly slower than the Princeton board. Both work, but it may become a pain. I ran into problems with the *Arts & Letters Editor* timing out continuously with the Cartridge and only occasionally with the Princeton

A Perfect Combination



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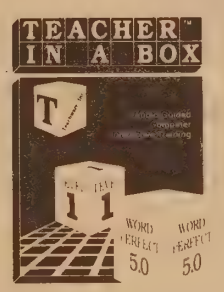

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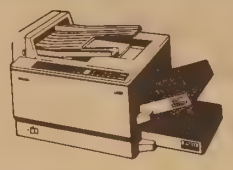

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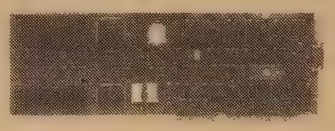

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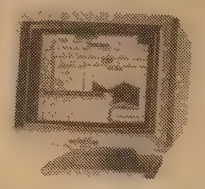

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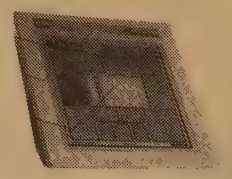

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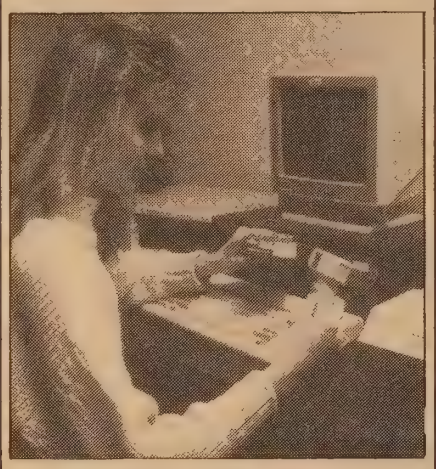

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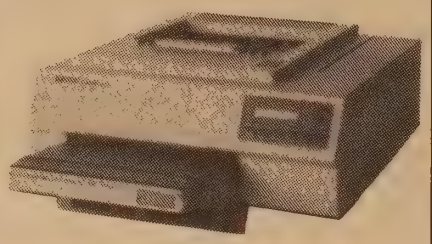

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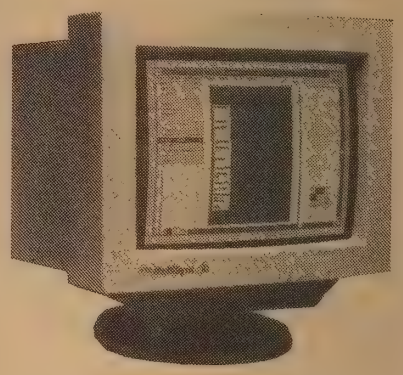

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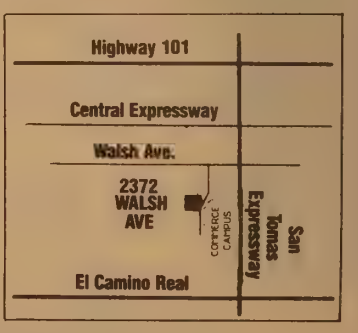

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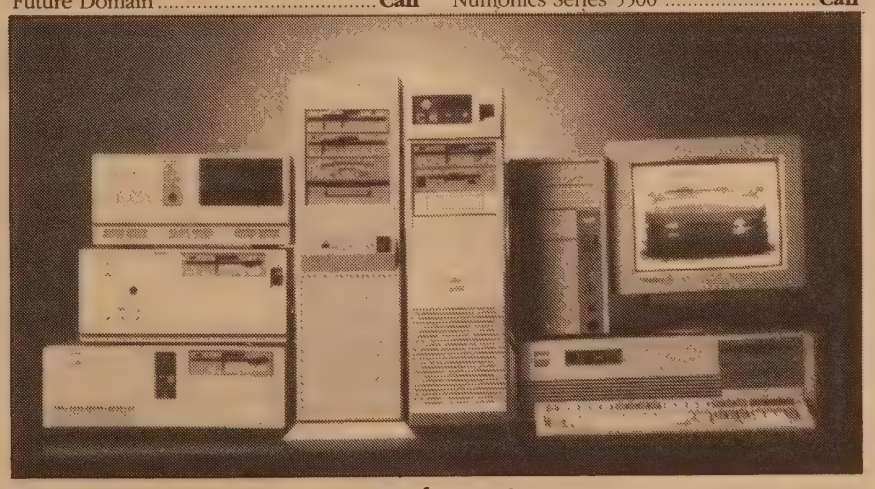

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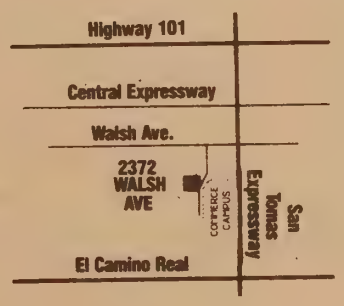

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board. With *AmiPro*, I ran into timeout problems with both boards when I tried to print a 30-page document. With a 10-page document, there were no problems with either board. The tech support folks at Pacific Data said that part of my problems may be connected with my 10 MHz bus. However, I never got any definitive answer to the timeout problems, so be aware that they exist.

There seem to be no printing timeout problems under DO, so long as you remember to do the mode command ending with a P so that it remembers not to timeout the LPT port (MODE LPT1:,,P). If you set the PDP Cartridge up as a serial port, then the mode command is: MODE COM1:96,8,N,1,P.

Both boards come with specific instructions for installing PostScript with various word processors and *Windows* applications. Essentially they are saying you just install their board as an Apple LaserWriter PostScript printer. If that particular printer does not exist in your favorite program's PostScript selection, you should install as a generic PostScript printer. I tried all of these combinations and had no problems as a generic PostScript printer or as any version of an Apple LaserWriter Plus printer.

With both boards you get the full 35-font set of PostScript fonts. You can also use downloaded PostScript fonts with both boards, if you have the soft fonts available from other

So, the choice is yours: PostScript for $3,000, PostScript for $700 plus the memory board. Both work. You pay for speed. Have at it.

Plotter In A Cartridge

And you thought that your HP LJ II printer didn't do plots like a digital plotter? Wrong again.

Plotter in a Cartridge adds the HPGL language to your laser printer. It emulates all the features of the HPGL plotter language found in such plotters as the HP 7470A, HP 7475A and the ColorPro. In fact, the documentation does not come with any language descriptions. Pacific Data Products recommends that you get the HP 7475A Interfacing and Programming Manual from Hewlett-Packard to learn how to use the language.

If you have done any plotting, you know that complicated plots take what seems to be forever to output. Wouldn't it be nice to be able to dump that plot to your LaserJet and see what it will look like, before you waste the time to let it run to completion on the plotter? Initially, that will be the main use for this Cartridge.

Another use is for programs that support the plotter but not the LJ printer. Again, you can get professional-looking plots easily.

I recently found another use for the Cartridge. I was using *Project Scheduler 4*, a superb project planning program, which prints nicely to PostScript printers and digital plotters, but looks pedestrian on the laser printer. Installing the Cartridge in my LJ gave me professional-looking output without having to purchase a PostScript printer or using my GoScript utility to print PostScript files on the printer.

I only found a couple of quirks with the Cartridge. It must go in the left Cartridge slot. I could not then access the right side font Cartridge with any of my other programs—when using the Cartridge, you've got a plotter, not a printer. I tried normal printing with *WordStar* 5.0 and *Ami* under *Windows*. Neither would work with my 25 in One Cartridge or my two HP Cartridges while the Plotter Cartridge was in the system.

According to Pacific Data Systems, the next release of the Cartridge will contain two methods for letting other software access the internal or Cartridge fonts: a programmed soft switch and a menu item. They also said that if you really needed those features, they would swap your old Cartridge for one of the new releases. That, my friends, is good customer service.

I tested the plotter Cartridge with *Arts & Letters*, under *Windows*. It printed all right, but I liked the way *Arts & Letters* handles the laser as a laser better than the way it ran the laser as a plotter.

Next I used it with *Project Scheduler 4*. Great results. The plotter output far outshined the laser output.

Lastly, I used the Cartridge with *Freelance Plus* 3.0. It worked fine, and produced good-looking plots. One anomaly here. If I use more than six pens, *Freelance Plus* sends what the Cartridge interprets as a form feed, so you don't get everything on the same page. The technical support folks at Pacific Data Systems told me that the Cartridge interprets a "park all pens" command as a carriage return. So, for now, you will need to keep the number of pens equal to the total pens in a single pen carousel.

Speed, however, was great. Even under *Windows*, the Cartridge gave prints of the plots much faster than the plotter did. Under *Freelance*, the delay was only seconds rather than the minutes or longer a plotter would use. Under *Project Scheduler 4*, the same thing—seconds rather than hours waiting for multiple page plots to be plotted.

The system requirements are rather simple. Your HP LJ II must have at least 1 1/2 Mb of memory. The Cartridge will work with letter, legal, executive, A4 and B5 paper. The documentation says that the plotter will work with a variety of envelope sizes, though why someone is plotting to envelopes I would like to know. The envelopes supported are COM-10, Monarch, C5, and DL, for whatever that means to you.

The Cartridge emulates 20 pen sizes of from 1 to 48 dots. Each dot is one-300th of an inch. The pen speed in the plotter approaches up to 150 meters per second. Resolution is at 300 dpi. The Cartridge supports 19 stroke fonts and all resident bitmapped fonts. There is no grey-scale emulation, just different shading styles as would be produced by the digital plotter. The documentation also states that the plotter is compatible with other font cartridges, but, as I said earlier, you will have to write an application specifically to work with those cartridges and the plotter cartridge, since they will not work together automatically.

The reason nothing will work normally is that the plotter cartridge preempts the font set numbers. Sets 0 through 39 are emulation fonts in the cartridge. Resident fonts from the laser are now number 100 to 123. Everything else is now numbered 1000 and up. You would have to build or rebuild a printer driver for each cartridge which you would want installed next to your plotter cartridge. I suspect that it is easier just to put in the cartridge when you want the emulation and take it out when you don't.

Installation is easy. Install the cartridge in the left-hand cartridge slot when the laser is powered off. When you turn it on, HPGL CARTRIDGE will appear in the laser window.

—Woody Liswood

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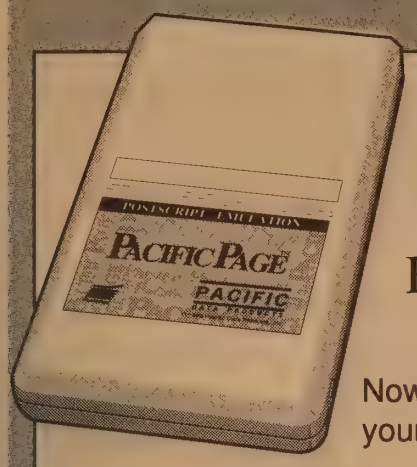

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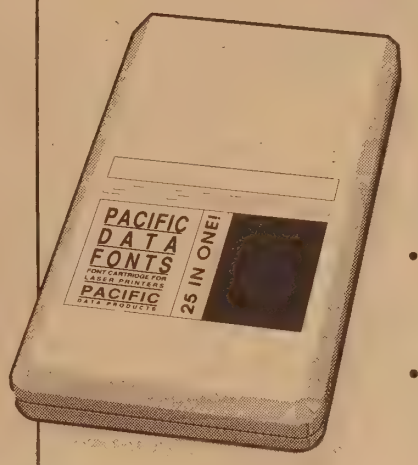

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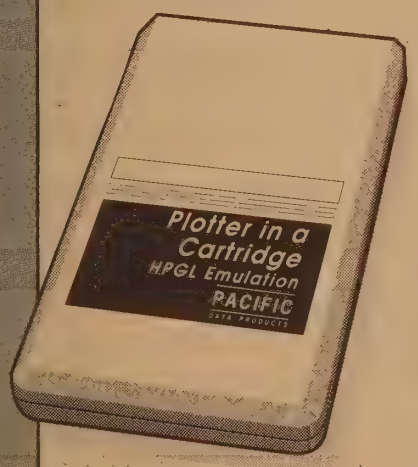

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- **Symbol**

What I like about both setups is that neither requires a TSR or memory resident program to operate. The Princeton board does download the fonts during the bootup process, so you add a few seconds to booting the process, but once loaded, all works well.

This equipment was tested on an ALR 386 running at 20 MHz with a 10 MHz bus. I have had in a variety of VGA boards, fax boards, scanner boards, modems and whatnot, as I worked my way through the tests and usage for this review. No problems with any of the configurations.

So, the choice is yours: PostScript for $3,000, PostScript for $700 plus the memory board. Both work. You pay for speed. Have at it. ■

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GoScript

GoScript is a nifty software printer driver which prints that EPS file to your printer as if it were a PostScript printer. Better than spending $7,000 or more on a new printer.

I run *GS* on a HP LJ II with absolutely no problems and get great-looking printouts. The documentation also says that *GoScript* also supports the HP DeskJet, the Canon LBP-811, the EPSON FX and LQ dot matrix printers, the IBM ProPrinter, among others. You might give them a call to see if they support your printer clone before ordering the package.

You will need about 2 Mb of space on your hard disk, since you have to load the software and the fontware. Fonts, as you will find out, take up lots of room. You also have to have enough printer memory installed to take a full page of graphics at the maximum resolution. That means a one-meg upgrade for your HPLJII.

There are 13 Bitstream fonts included with *GoScript*. You can also use other Bitstream fonts. *GoScript* uses extended memory, if you have it, to store a page image prior to printing. Speeds things up considerably. It also uses a math coprocessor, if you have it installed. You set these defaults, and others, in a special configuration file.

GoScript is a good, cheap, workable, necessary software solution to what some folks consider an expensive hardware problem.

GoScript is a good, cheap, workable, necessary software solution to what some folks consider an expensive hardware problem. It has never given me any problems and has produced some exceptionally good-looking graphic printouts on my HPLJII.

(LaserGo, 9235 Trade Place, Suite A, San Diego, CA 92126, 619/530-2400.)

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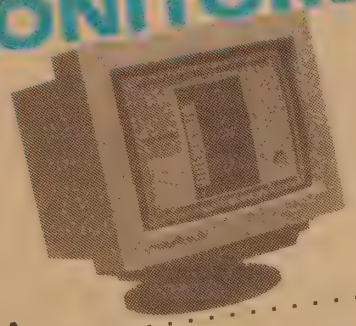

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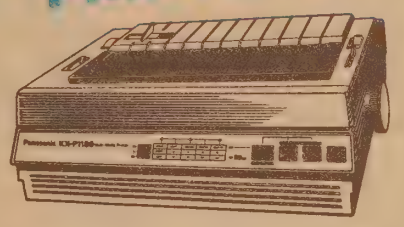

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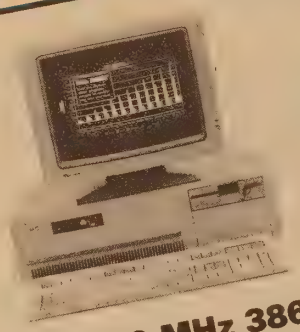

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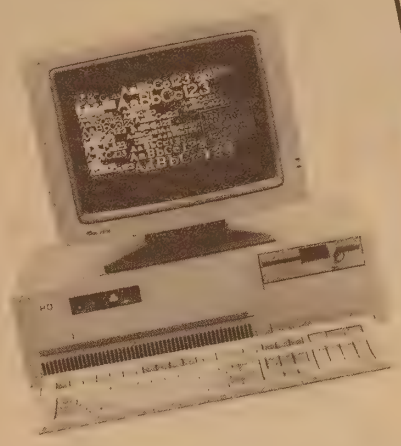

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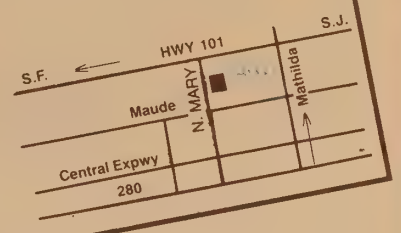

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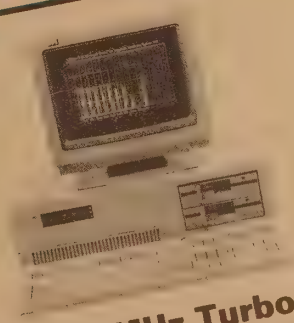

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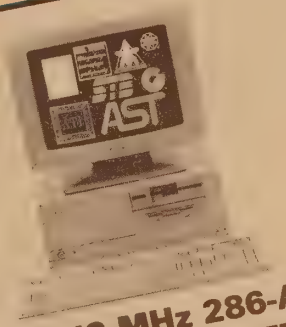

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Getting More From Your Hard Disk

The Perstor Hard Disk Controller

By Woody Liswood

It's probably a pretty specialized group that gets excited about their disk drive controllers. Nonetheless, a new controller from a company called Perstor is something to get excited about, since it will allow you to nearly double your disk's capacity.

The Perstor Controller uses its own proprietary recording techniques with standard MFM drives to increase the storage capacity of your hard disk up to 90%. If you have a hard drive which is compatible with the Perstor Controller , you can now increase your storage capacity by changing controllers, rather than buying a new drive-and-controller combination.

The Perstor Controller supports two hard drives and two floppy drives. The floppies can either 5 1/4" or 3 1/2" drives and can be double or quad density. I really like it when a single board does multiple functions, since I am out of slots on my machine and have to take something out whenever I put something in. (Too bad Perstor did not add serial and com ports to this thing. Maybe in a future release, eh?)

Perstor claims that its controller works on a wide variety of MFM drives. They supply a detailed list of the drives they support: drives from CDC Wren, Lapine/Kyocera, Micropolis, Miniscribe, Maxtor, Microscience, NEC, Newbury Data, PTI, Priam, Rodime and Seagate are all listed as compatible. However, since manufacturers are continually fiddling with their drives, you might want to give Perstor a call to insure that your particular pet will work with their controller.

If you have a hard drive which is compatible with the Perstor Controller, you can now increase your storage capacity by changing controllers, rather than buying a new drive-and-controller combination.

How Well Does It Work?

To give the controller a good test, I attempted to gather a few of the more popular drives to test the controller. I was especially interested in testing the limits.

The largest increased-capacity claim on the Perstor list was from Maxtor. Maxtor makes a drive which formats to 159.87 Mb normally. Perstor claims that it will be 243.7 Mb with their controller. Maxtor, however, declined to provide a drive for testing, so I wasn't able to test the controller's performance with this drive.

CDC Wren 2 has a drive (86155-9) which formats, normally, to 72 1/2 Mb. This is a 925-cylinder, 9-head drive. The Perstor Controller formats this drive to 132 Mb. I ran the drive for three solid months of continuous usage—with *zero* problems.

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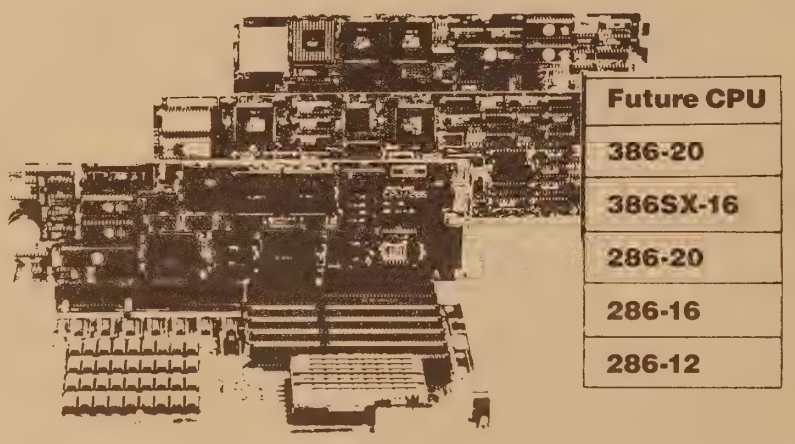

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I also tried a Seagate STA 4096 drive. This drive has 1024 cylinders and nine tracks. While it normally formats to 80.2 Mb, with the Perstor Controller it formats to 146 Mb. I ran this one for two full months, again with no problems.

Perstor calls its technique ARDT, or Advanced Data Recording Technology. This technique uses more sectors per track because it allows bits (called flux reversals by the high technicians of recording) to be shorter and closer together. Perstor claims to also increase data throughput from 10% to 110% with this technique.

According to Perstor, a normal MFM drive-and-controller combination has 17 sectors per track, with a data transfer rate of five Mbits per second. RLL technology formats to 26 sectors per track and has a transfer rate of 7 1/2 Mbits. The Perstor ARDT technology has 31 sectors per track and a transfer rate of nine Mbits.

Using the Perstor Controller, you should get significant dollar savings per megabyte. Perstor figures the cost per megabyte of a normal drive at about $14.05 per meg. They compute the cost per megabyte of their controller to be $9.74. You will need to compute your own statistics based on the combination you have now, and what a new combination would cost you compared to just adding the controller and increasing the capacity of your current drive.

Software Options

Now that you have these high-megabyte drives, what partitioning software should you use to get the maximum effect from this setup? Remember, DOS 3.3 and lower does not allow partitions greater than 32 Mb. Perstor recommends *SpeedStor* and *Disk Manager* as the best choices; I, however, do not. Neither *SpeedStor* nor *Disk Manager* allow a bootable partition of over 32 Mb. I tested, and used successfully, *Vfeature* from Golden Bow Software to format my 132 Mb drive as a single bootable partition.

Using the Perstor Controller, you should get significant dollar savings per megabyte. Perstor figures the cost per megabyte of a normal drive at $14.05 per meg. They compute the cost per megabyte of their controller to be $9.74.

On the other hand, you might consider switching to DOS 4.1. I also set up two of the drives I tested as single bootable partitions using MS-DOS 4.1. I had zero problems doing that, and I did not have to load a special device driver just to break the 32 Mb barrier. I now maintain about 90 Mb of software out on the drives...lots of *Windows* applications. I have had no compatibility problems with either the controller, DOS 4.1 or any of the odd combinations I run on my computer.

All of this was tested on a 20 MHz ALR 386 with a 10 MHz bus; a variety of VGA and EGA cards; Seagate, CDC Wren, and Priam drives; with a 1.2 Mb floppy as the A drive and a 3 1/2" floppy as the B; an Irwin tape inserted between the floppy cable and the Perstor Controller and a variety of PostScript, fax, and modem boards in the computer at various times. I had problems with the Irwin tape backup system, though; Irwin said that the system could not work properly with the Perstor Controller. The Perstor did not seem to mind that the Irwin unit was there, but the Irwin unit just did not make reliable backups. Their tech support folks pointed their fingers at Perstor. Who knows? (Perstor Systems, Inc., 1335 South Park Lane, Tempe, AZ 95261, 602/894-3494) ■

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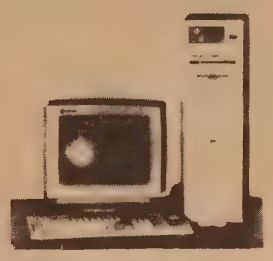

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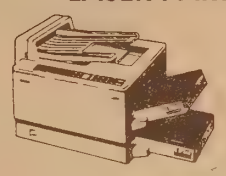

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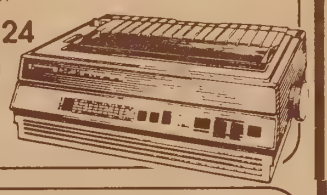

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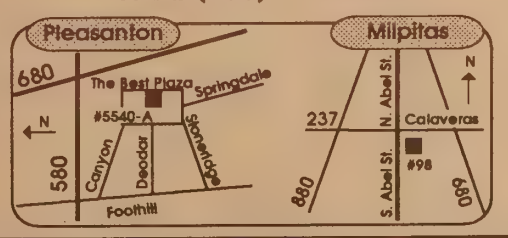

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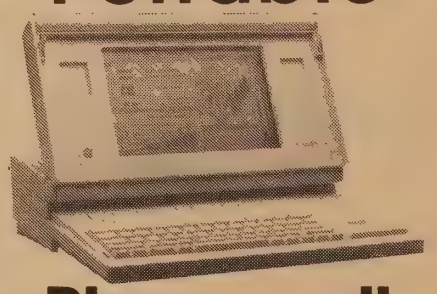

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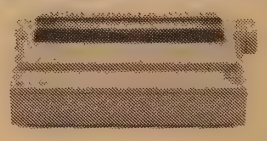

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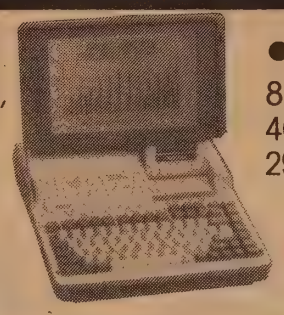

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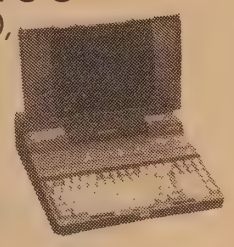

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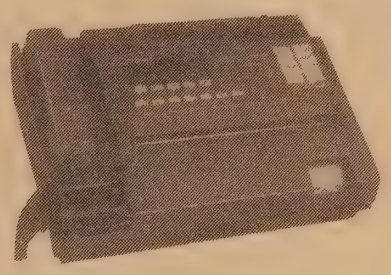

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Word 5.0

A Classic In Transition

By Robert Beauchamp

They are the tried and true PC word processors. Their names echo like those of Homer's heroes in the mythology of the personal computer world: *WordStar* 2000, *MultiMate Advantage II*, *WordPerfect* 5.0 and Microsoft *Word* 5.0.

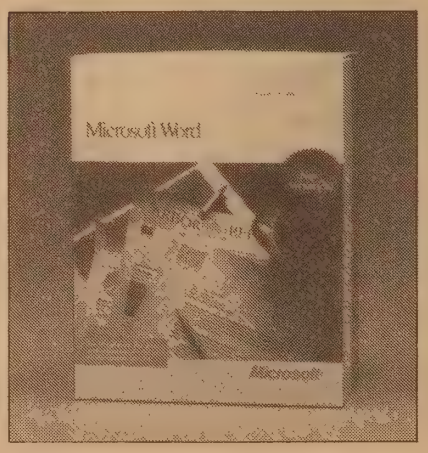
Burnished and polished, a new name, a few new features—these grand old ladies of word processing are brought out one more time, one final show of strength before succumbing to the PC equivalent of bore worm: the graphic interface. For one day soon, even the most diehard IBMer will be pointing and clicking, cutting and pasting, like there never was a text-based interface.

In these sentimental twilight years, however, there are still letters to be written, reports to be published, and lists to be printed.

Hence a review of the newest version of one of the most grand of the grande dames, Microsoft *Word* 5.0.

In these 'tween years between the text-based interface and the full implementation of the graphic interface, Microsoft has chosen the road that alienates the fewest users. *Word* is completely functional in a standard text format. However, if you do have an EGA or VGA card and monitor, there are a series of features that let you take advantage of your investment.

But graphics aren't the whole story. No matter how many features an application adds, or in spite of them, it still must be usable. *Word* 5.0 has completed its evolution of mouse implementation to the point where you really do wonder how you got along without it.



In these 'tween years between the text-based interface and the full implementation of the graphic interface, Microsoft has chosen the road that alienates the fewest users.

Another facet of the new *Word* that is much less successful is its desktop publishing features, which are as cumbersome to use as the mouse is easy.

Setup And Installation

Word 5.0 comes with the standard Microsoft setup program. These types of programs are a necessity when installing applications with as many options as *Word* offers. The step-by-step approach ensures that even the novice computer user can manage to get this camel through the needle and on to their hard disk.

Along with the setup program, *Word* offers a surprisingly informative tutorial. Even if you're an old hand at *Word*, you'll want to peruse this online tutorial to educate yourself as to its new features. If you've never used a mouse before, you'll especially want to do the tutorial, as it contains mountains of information on what you would think would be the simple task of using a two-button mouse.

The Big G, Graphics

If you've never used a computer before, *Word*'s graphics features won't be a problem, simply because you won't know any better. If you're a vet whose MIS techie just installed your first VGA card, you'll undoubt-

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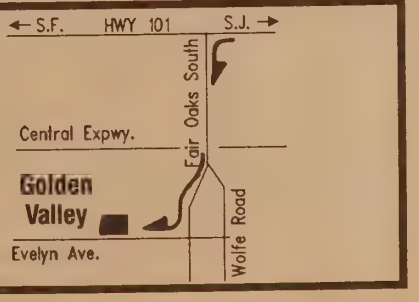


edly be confused by the Byzantine structure of *Word*'s use of graphics.

You may even be frustrated to the point of saying something like, "Is this what they're talking about when they say how great graphics are?"

No, it isn't. However, in an attempt to let you best take advantage of *Word*'s graphics features, we'll try to pull out its various strings without the whole thing unraveling.

One of the problems *Word* has in making the graphics concept clear to the user is that the word "graphics" covers a lot of territory.

This is the best way of explaining what graphics is to *Word* that I can come up with. (By the way, you have my permission to write this out in calligraphy, frame it and put it up next to your "Peace to all who enter here" poster.)

What "Graphics" Is (Word 5.0 Version):

Graphics is what you see on your screen when you have a CGA, EGA or VGA card and monitor.

Graphics is a *Word* mode that takes advantage of your CGA, EGA or VGA card and monitor. It is distinguished from Text mode, which is what you get if you have none of these.

Word's graphic mode shows your text nicely. Bold letters are bold, italic letters are italic. They're all the same size, but at least they're not different colors.

Graphics is a Page Preview function in *Word* that allows you to see how your page will look once it has been printed. It shows your fonts in their proper sizes and weights. You can't edit or work in this mode, however. No touching, just looking.

For the tactile members of the group, **Graphics is** Show Page Layout. Show Page is a mode that lets you see kind of what your page will look like. You may not see the real thing, but you can work in this mode.

Graphics are those cute little pictures that you can import from paint programs. You can see your cute little pictures in Page Preview. You can work with them in Show Page. You can forget they are there in graphics mode.

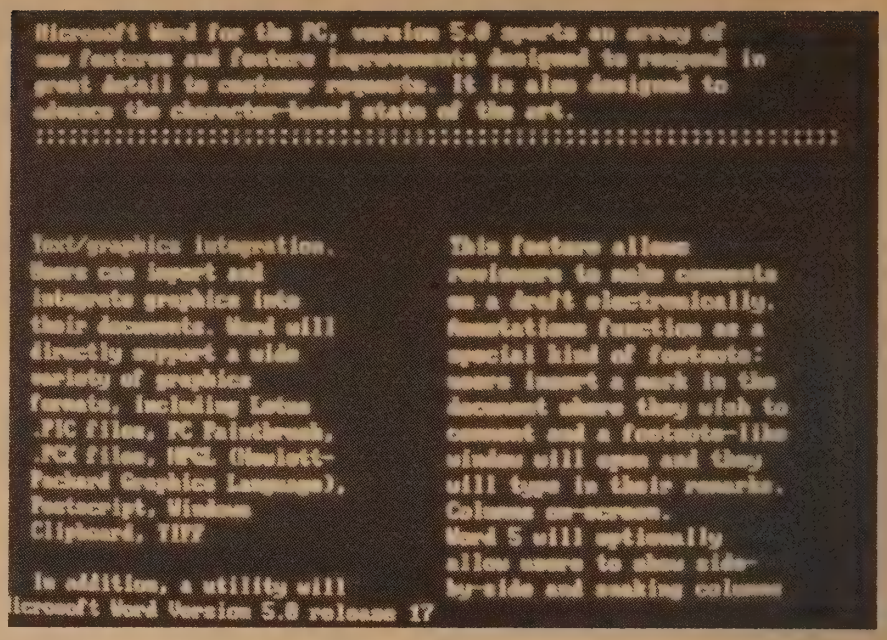
Graphics is a true graphic interface, as found on Macintoshes and in Microsoft *Windows Presentation Manager*. With a true graphic interface you can see your work as it will look when printed and work on it at the same time. This is not what *Word* 5.0 offers. And yes, it is what everyone is talking about when they say graphics are so great.

What You See Is What You See

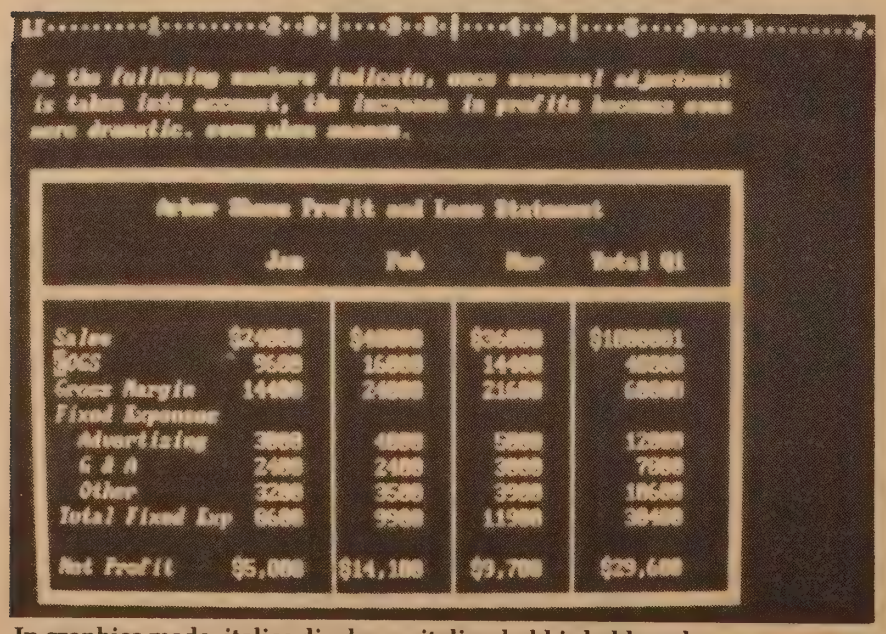
While this multiple mode approach—Text, Graphic, Show Page and Page Preview—is a compromise between the text and true graphic interface, it is probably the best compromise.

In order not to leave those without *Windows* behind, and let those eager VGA card holders actually do something with them, it is a workable if awkward solution.

The advantage of Text mode is speed. It takes longer to create a graphic image of your work on your screen than a text image. However, for the routine word processing required to write this article, the journalist's non-professional typing speed had a greater impact on productivity than the mode in which the work was being done.


Microsoft Word for the PC, version 5.0 sports an array of
new features and feature improvements designed to respond in
great detail to customer requests. It is also designed to
advance the character-based state of the art.
Text/graphics integration.
Word can import and
integrate graphics into
their documents. Word will
directly support a wide
variety of graphics
formats, including Lotus
.PIC files, PC Paintbrush,
.PCX files, HPGL (Hewlett-
Packard Graphics Language),
Postscript, Windows
Clipboard, TIFF
In addition, a utility will
This feature allows
reviewers to make comments
on a draft electronically.
Annotations function as a
special kind of footnote:
when insert a mark in the
document where they wish to
comment and a footnote-like
window will open and they
will type in their remarks.
Columns are
Word 5 will optionally
allow users to show side-
by-side and scrolling columns
In text mode, *Word* is generally its familiar self.

While the multiple mode approach—Text, Graphic, Show Page and Page Preview—is a compromise between the text and true graphic interfaces, it is probably the best compromise.


In graphics mode, italics display as italics, bold is bold, and your formatting appears onscreen.

The mouse pointer in Graphics mode is an actual arrow, not merely a rectangular cursor you can move around. The mouse pointer changes shape according to its functions, such as scrolling through text and re-sizing windows.

The Show Page Layout mode is what you'll use most often when employing *Word*'s desktop publishing features.

It is especially important when you want to use various fonts in your document.

The IBM character set gives equal weight to each character on the screen. A **w** takes up as much room as an *i*. This, of course, is not true of the world of print.

Depending on whether your columns are justified, and the size and type of font, more or fewer characters will fit on a line.

Show Page Layout uses the same old characters, but it extends the margins and the page size to show the impact of a different font size on the length of a line.

This same "expansion" tactic is used when you insert your graphic pictures into your text.

Page Makeup Features

Word 5.0 touts its page makeup features. *Word* allows you to create *PageMaker*-like documents. You can create multiple columns, insert graphics, create lines, put text in shaded boxes—the works.

As Senator Lloyd Bentsen might say, however, "I know *PageMaker*. *Word*, you're no *PageMaker*."

In this mutant-hybrid graphics world, Microsoft comes up with some pretty interesting ways to get graphics on the page. In what can be best described as a "hands off" approach, *Word* utilizes Microsoft's already-proven "if you've got a format, do I have a window for you" methodology.

Word's basic solution to the myriad of problems associated with formatting is to give you a window in which to place all the information pertinent to what you're working with.

For example, if you want to change

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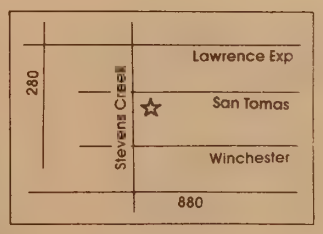

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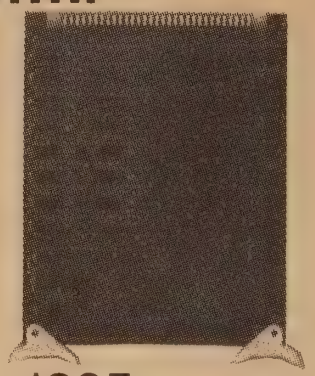

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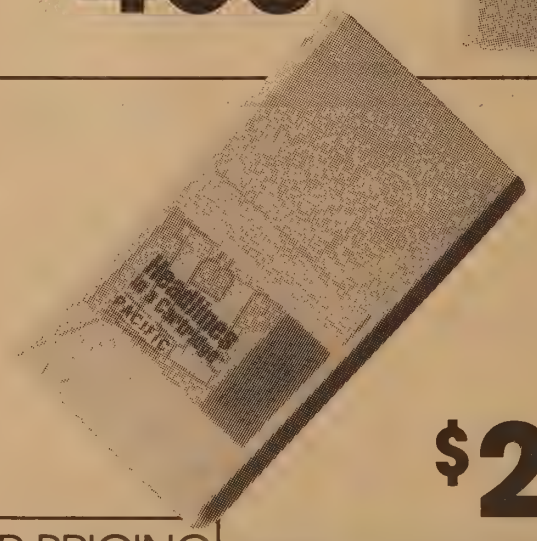

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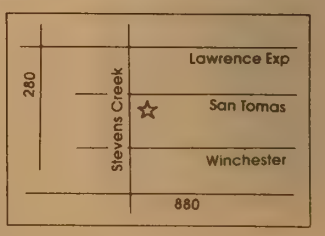

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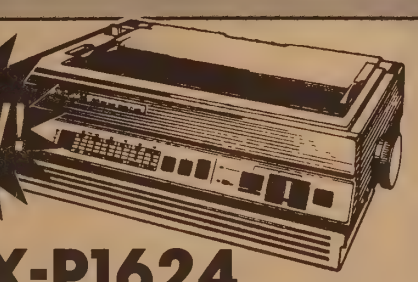

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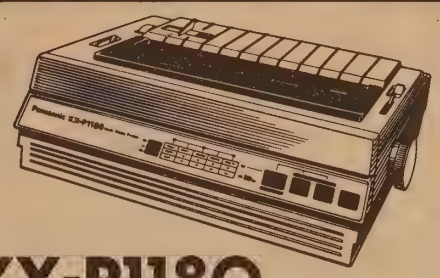

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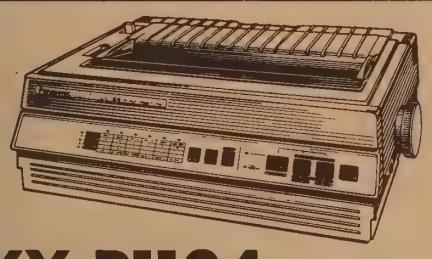

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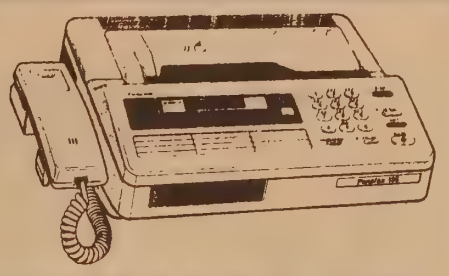

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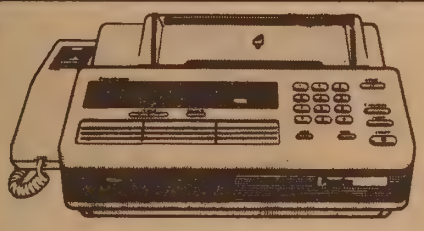

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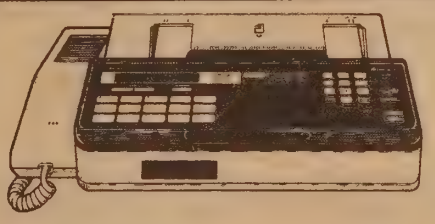

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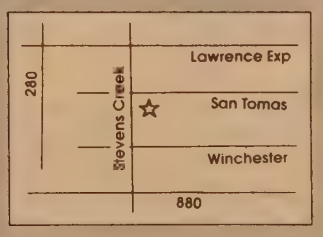

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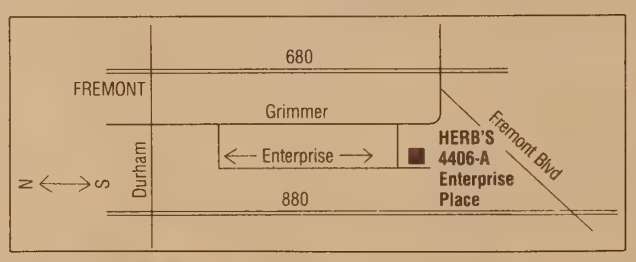

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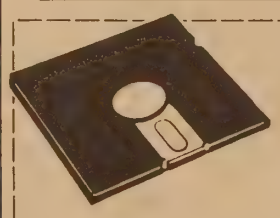

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When you are "importing" a graphic into the document, you are actually "linking" the graphic's file to the document. This is a great way to reduce the size of your documents.

the font of a paragraph in one of your documents, all you have to do is: 1) highlight the section; 2) choose Format from the menu at the bottom of the screen; 3) choose Character from the Format menu; 4) when the window for character formatting information appears, type in the name of the font in the space labeled Font Name.

Once you've learned the ins and outs of these windows, nothing could be simpler. This holds true for everything from paragraph alignment to pagination. It is the best solution I've seen for overcoming text-based limitations.

However, when applied to graphics manipulation—we're talking about the cute pictures now—the use of these informational windows is less than inspiring.

While using the Show Page mode allows you to manipulate the size of your graphic, its position on the page, whether or not text wraps around it, etc., doing this in *Word* is nothing like *PageMaker*.

Rather than allowing you to cut and paste graphics and size them by clicking and dragging with the mouse, *Word*'s information window requires you to provide all the relevant details. You have to use your imagination as you decide the dimensions of the box and how far in from the edge of the page it will be.

In a graphic interface application you really don't care if the picture is 3 1/4" from the top of the page and 2 3/4" from the side. You simply drag it to where it looks good. With *Word* you are actually required to type in where you want your picture to go.

You can always go to Page Preview to check your progress, but this can get tiresome.

The most frustrating page makeup feature, however, is line drawing. This unfortunate orphan takes a leap backwards, creating lines from the IBM extended character set. It links the lines, therefore, with the text. It would be nice to be able to simply draw a line that stays put even if the text changes.

There are so many restrictions in using this feature that it's almost not worth it. You especially have to be careful that your line, since it is in actuality a repeated character, is in a fixed-pitch font, such as Pica or Prestige, that gives each character equal space. Proportional fonts, such as Helvetica or Times Roman, will, when printed, screw you up.

If you're creating your document using proportional fonts, you have to make sure you re-format your lines to a fixed-pitch font.

It is important to know when using *Word*'s page makeup features that when you are "importing" a graphic into the document, you are actually "linking" the graphic's file to the document.

This is a great way to reduce the size of your documents, since the graphic isn't actually "in" the document, it's simply called upon when necessary. It is important, however, if you transfer your *Word* document from one computer to another, that you send the graphics file along with it.

Don't be sold on the line that you don't need a page makeup program such as *Ventura Publisher* or *Springboard Publisher* now that you have *Word* 5.0. Rather than call these functions and features page makeup, I think it would be more accurate to call them page dress-up. They will make your pages look nicer. You can do things you couldn't do before, such as wraparound and multiple columns. However, *Word*'s page makeup functions satisfy only the most rudimentary of page makeup tasks.

Mighty Mouse

While *Word* suffers from its fusing of graphics and text modes, the one place where it truly excels and leaves the competition behind is in the area of ease of use.

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While Word suffers from its fusing of graphics and text modes, the one place where it truly excels and leaves the competition behind is in the area of ease of use.

mouse exclusively. *Word* makes excellent use of the Microsoft Mouse's right and left buttons to race you through tasks.

Highlighting, cutting and pasting are the most apparent successes in this regard.

To move a selection with the mouse all one has to do is highlight by holding down the right button while moving the mouse through the text.

To cut, simply click on Copy with the right button if you want to copy the text into a file for later use, or Delete if you want to simply remove it to another part of your document. *Word* stores your selection in a "clipboard." Next, with the mouse, move your cursor to the place where you want to place your text. Click on Insert with the right button from the menu.

This is actually faster than doing the same operation with the mouse on a Macintosh, because you don't have to scroll through pull down menus to find, "Cut," "Copy" and "Paste."

Using the left button instead of the right in these situations gives you more flexibility. When you click on the left button on the Copy command, for instance, *Word* asks you where you want to copy to. By typing in a name, you can actually save up your cuts. When you want to access any one of these cuts, *Word* again makes good use of the mouse's right button.

To insert one of your old cuts, click on Insert from the command menu with the left button. *Word* now asks you where you want to insert from. If you can remember what you called your cut, you can type it in. If not, however, all you have to do is click the right button and Voila! a list of all your cuts appears before you. Click on the name of the cut you need with the right button and it's instantly inserted into your text.

This speed button is used throughout the new *Word*. When you choose a file to load, when you want to save a file to another drive, and when you are spell checking, all you have to do is point and click. With no function keys to remember, the time savings are amazing.

Spell checking is another great place to use the mouse. Coupled with an updated checker, this task is now truly enjoyable.

One of the less advertised features of *Word* is the presence of speed formatting keys. For example, if you want to bold a section of text, highlight it and then press ALT B. To center the text, ALT C. Mac users will recognize this feature as well.

When used in conjunction with the mouse, these speed formatting combinations make function keys as obsolete as 8" floppy disks.

Clearly, if you use a mouse, *Word* offers a very desirable alternative to more traditional PC word processors.

Conclusion

Word 5.0 holds its own in the feature wars. It offers tabs and tables, style sheets, outlining and macros. Many of which most users will never use. On a feature-by-feature basis it would be a tough call, choosing among the grande dames.

As the trend is definitely toward having your word processor produce a higher quality finished output, *Word*'s page makeup features are a necessity. However, one wishes they were better implemented.

Not that any of the problems couldn't be solved by a version of *Word* designed for the true graphic interface of *Windows*.

Where Microsoft *Word* really leapfrogs its way over its venerable sisters is in ease of use. It's as if the designers said, "Well, if we can't bring the graphics of the Macintosh to the PC, at least we can bring them the mouse."

Which for those of us that have to wait for that golden day when these tall ships of word processing sail into the sunset, it is at least something. ■

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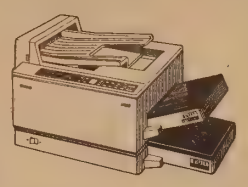

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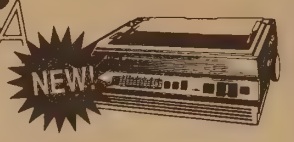


KX-P1624

Wide Carriage, 24-Pin Dot Matrix Printer with many high end printer features

- EZ set operator panel controls more than 20 functions
- Paper parking
- Rear, bottom, front and top feeds 360 x 360 dpi resolution
- Multiple font capabilities—2 draft and 5 letter quality

$495

Panasonic Office Automation OA

SPECIAL THIS MONTH

KX-P1124

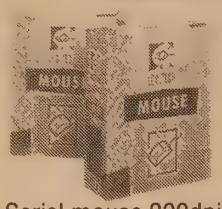
- "EZ-Set" Front Panel Controls over 20 Functions!
- 24 PIN For letter Quality
- 192 CPS; 63 CPS LQ
- Combines over 5500 Type Styles!
- Rear, bottom & front feed paper paths
- 360 x 360 dpi

$289

KX-P1180 192CPS Draft/38CPS NLQ $175
KX-P1191 240CPS Draft/48CPS NLQ $215
KX-P1595 288CPS Draft/61CPS NLQ $429

TWO YEAR LIMITED WARRANTY

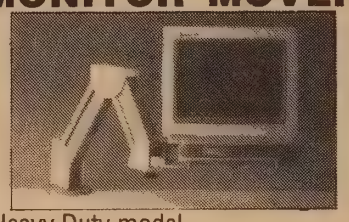
LOGITECH



FROM $59.95

- Serial mouse 200dpi $59.95
- Bus Mouse 200dpi 63.95
- New Serial mouse 320dpi 75.00
- New Bus mouse 320dpi 75.00
- Scanman 169.00
- Paint Show 15.95

MONITOR MOVER



- Heavy Duty model
- Can 360 Saving much time and comfortable for your optical view
- Able to hold monitor up to 50lbs.
- Platform Tray: 12"x 12"

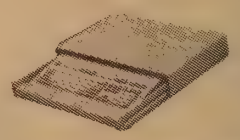
$65.95

COMPUTER BACK CHAIR

- Solid Asian-Oak constructions
- Durable earth-tone seat cushions
- Height Adjustments

$34.95

KEYBOARD DRAWER



$29.95

- Place your computer and monitor on this reinforced 20 gauge steel platform
- 20 1/4 "x 10 1/8" x 2 1/2" (WxDxH) overall dimensions
- Keyboard drawer under table $24.95
- Keyboard drawer w/power center .. 49.95

MONITORS

- 12" Hi-Res Amber monitor $79
- 14" Hi-Res Flat Screen Amber Monitor 110
- NEC Multisync 2A 800 x 600 490
- NEC Multisync 3D 1024 x 768 620
- Sony 1302A 900 x 560 559
- Sony 1304 1024 x 768 675
- Goldstar EGA Monitor 640 x 350 315
- Goldstar VGA Monitor 720 x 480 335
- Goldstar Monitor 800 x 560 445
- Packard Bell Models ..... CALL

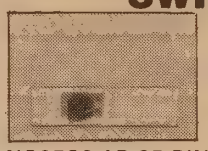
DISK DRIVERS

- 360K $65
- 1.2MB 75
- 1.44MB 85
- ST-225 20MB 195
- ST-251 38 ms 40MB 345
- ST-4096 28ms 80MB 560
- ST-125-20 MB 3 1/2" 20MB 249
- ST-138 (3.5",38ms) 30MB 339

CASE & POWER SUPPLY

- XT Case $35
- AT Case 51
- Baby AT Case 49
- Mini AT Tower Case w/200W Power supply 129
- AT Tower Case w/230W Power supply 169
- 165W XT Power Supply 39
- 200W AT Power Supply 55
- 220W AT Power Supply 58
- 230W AT Power Supply 59

SWITCH BOX



FROM $14.95

- NO25C2 AB 25 PIN $14.95*
- NO254 ABCD 25 PIN 19.95
- NO252X AaBb 21.95
- NO362 AB 36PIN 19.95
- NO364 ABCD 36PIN 21.95
- NO362X AaBb 36PIN 23.95
- NO9x4 ABCD 9PIN 18.95

CABLES

- 6'/10'/25'/50' Printer Cable $5.95/7.95/17.95/31.95
- 6'/12'/25' RS232 Cable $7.95/12.95/19.95
- 6' Centronics cable 9.95
- 6' Monitor extend cable 7.95
- 6' VGA Cable 9.95
- AT/XT HDD 7.95/4.95
- Power Cord 5.95
- 6' Null modem cable 8.95

MODEM

(Made in USA)

- CRDMB2450 ..... $109
  Internal 2400 Baud Modem
- CRDMB1250 75
  Internal 1200 Baud Modem
- CRD2400EX 125
  External 2400 Baud Modem
- CRD2400MNP 169
  External 2400 Baud Modem With MNP

AUTO SCAN SWITCH, BUFFER CONVERTER

This auto scan switch allows multiple computers to share one printer without the need for manual switching.

- MP401 4 computers share one printer (DB25 parallel) $108
- MP801 Same as MP401, except using 8 ports 135
- MS401 4 computers share one serial peripheral 114
- MS801 Same as MS401, except using 8 ports 139

AUTO DATA SWITCH WITH BUFFER

ASB422-256 ..... $249

- 4 computers share 2 printers • Auto scan or key switch with 256K buffer • Transfer rates 1K abyte/sec/port • LED display, which shows quantity of copies, can be easily set by + or - button

ASB624-256 369

- 6 computers share 4 printers • Port selection through soft code or at the press of a key switch • 256K memory

ASB24-512 419

- Same as ASB624-256 except with 512K memory installed

THE COMPLETE PC

THE COMPLETE COMMUNICATOR provides high-speed facsimile (9600), sophisticated voice mail and 2400 bps date medium on a single add-in card **$595**

FAX9600-The Complete Fax provides 9600 bps facsimilies on a PC **$495**

COMPLETEANS The Complete Answering Machine provides advanced personal voice message system for a PC **$295**

ADD ON BOARD

- Multi I/O (AT/XT) $45
- Mono Graphic/ Printer 39
- Color Graphic 35
- EGA 600x800 card 105
- ATI 16 Bit VGA 640x480 (small wonder) 179
- ATI 16 Bit VGA 1024 x 768 512k (wonder) 235
- ATI 16 Bit VGA 1024 x 768 512k (wonder) w/mouse 295
- XT Hard Disk Cont. 55
- AT HCC/FDD Cont 2:1. 85
- DCT RLL CONT FD/HD 145
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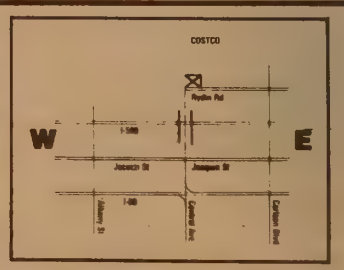

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FREE MS-DOS 4.01
- Landmark=59, SI=46
- Full size Tower Case w/230W Power Supply
- Full size 6 layer mainboard running at 0/1 wait state
- Double Sigma Intel 80386 33MHz CPU & PHOENIX BIOS
- 70ns 2MB RAM standard, expandable to 16MB
- 1:1 interleave HD/FD controller card
- 80MB 28ms hard disk
- 1.2MB and 1.44MB Floppy Disk Drives
  *2 serial (one optional), 1 parallel, 1 game port
- 16-bit ATI small Wonder VGA card w/256K RAM
- 14" Hi-Res color VGA Monitor
- 101 Keytronic Enhanced Keyboard
- 2x32 bit, 5x16 bit, and 1x8 bit slots
- Sockets for 80387 Math Co-processor
- Ideal for Desktop Publishing, CAD and Network Service

Other Options available
Made in USA

ONE YEAR WARRANTY ON LABOR & PARTS

ECI 386-25MHz 64K Cache Tower System

$2785

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- Landmark=38, SI=30
- Full Size Tower Case w/230W Power Supply
- Full size 4 layer mainboard running at 8/25MHz 0/1 wait state
- Double Sigma Intel 80386 25MHz CPU & PHOENIX BIOS
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- 1:1 interleave HD/FD controller card
- Full High 80MB 28ms hard disk
- 1.2MB and 1.44MB Floppy Disk Drives
- 2 serial (one optional), 1 parallel, and 1 game port
- 16-bit ATI small Wonder VGA card w/256K RAM
- 14" Hi-Res color VGA Monitor
- 101 Keytronic Enhanced Keyboard
- 1x32 bit, 5x16 bit, and 1x8 bit slots
- Sockets for 80387 Math Co-processor
- Real Time Clock/CMOS memory w/Battery Backup
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- OS/2, Xenix and UNIX compatible

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- 80ns 1MB RAM standard expandable to 8MB on board or up to 16MB total using dedicated 32-bit memory board
- Sockets for 80287 and 80387 Math co-processors
- CHIP-TECHNOLOGY chip set eliminates overheating and consumes less energy
- Supports Shadow video/ROM and memory interleave
- OS/2 and Unix compatible
- 1:1 interleave HD/FD controller
- 80MB 28ms hard drive
- 2 serial (one optional), 1 parallel, and 1 game ports
- 16-bit ATI Small Wonder VGA card w/256K RAM
- 14" Hi-Res VGA monitor
- Full size Tower case w/230W power supply
- 101 enhanced keyboard
- Ideal for Desktop Publishing, CAD and Network server
- 1.2 Floppy Drive

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ECI 386SX SYSTEM

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- 16 MHz Intel 80386SX CPU running at 0/1 wait state
- Landmark=21.6, SI=20. Latest AMI BIOS
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- 6 16-bit and 2 8-bit slots
- 80387SX Math co-processor socket
- 1:1 interleave HD/FD controller
- 40MB; 28ms hard drive
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- Total software compatible w/80386
- Monochrome monitor and card w/parallel port
- Standard AT case w/220 power supply
- 101 enhanced keyboard
- An affordable system w/386 power

Other options available
Free MS-DOS 4.01

UPGRADE	
EGA	1499
VGA	1595
SUPER	1795

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ECI 286-12 STANDARD SYSTEM

$695

- Baby size main board running at 6/12 or 8/12 0/1 wait state
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- 5 16-bit and 3 8-bit slots
- 1 MB RAM expandable to 4MB on board
- Accepts DIP or sip RAM chip
- Socket for 80287
- Very Large Scale Intergration chip set, eliminating over heating problems, and energy saving
- 2:1HD/2FD 16-bit controller
- 1.2MB floppy drive
- Monochrome monitor and card w/parallel port
- 101 enhanced keyboard
- Standard AT case w/silent 220 watts power supply
- A great general purpose system

Other options available
Free MS-DOS 4.01

UPGRADE	EGA	VGA	SUPER
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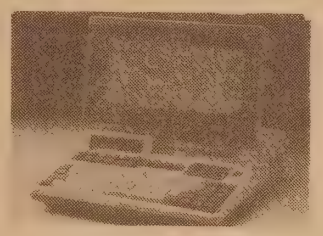
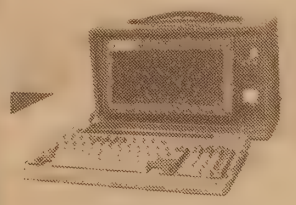
B300-AT LAPTOP COMPUTER



- 80286 CPU running at 10MHz
- 1 MB RAM expandable to 1.5 MB RAM board
- 20MB hard disk drive
- One 3 1/2" 1.44MB floppy disk drive
- 1200 bps Hayes compatible modem

$2089

ECI GAS PLASMA PORTABLE
386-25MHz 66MB HARD DISK & F/DD



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640x400 Pixel graphics display
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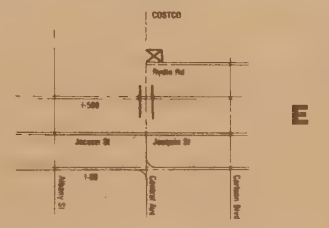

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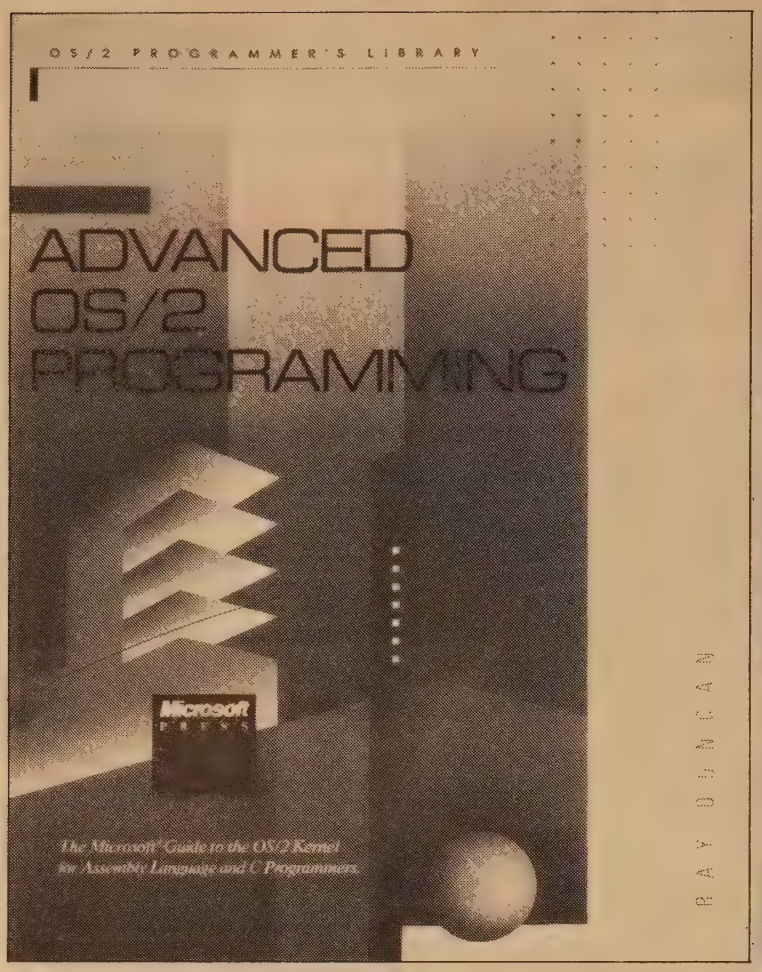
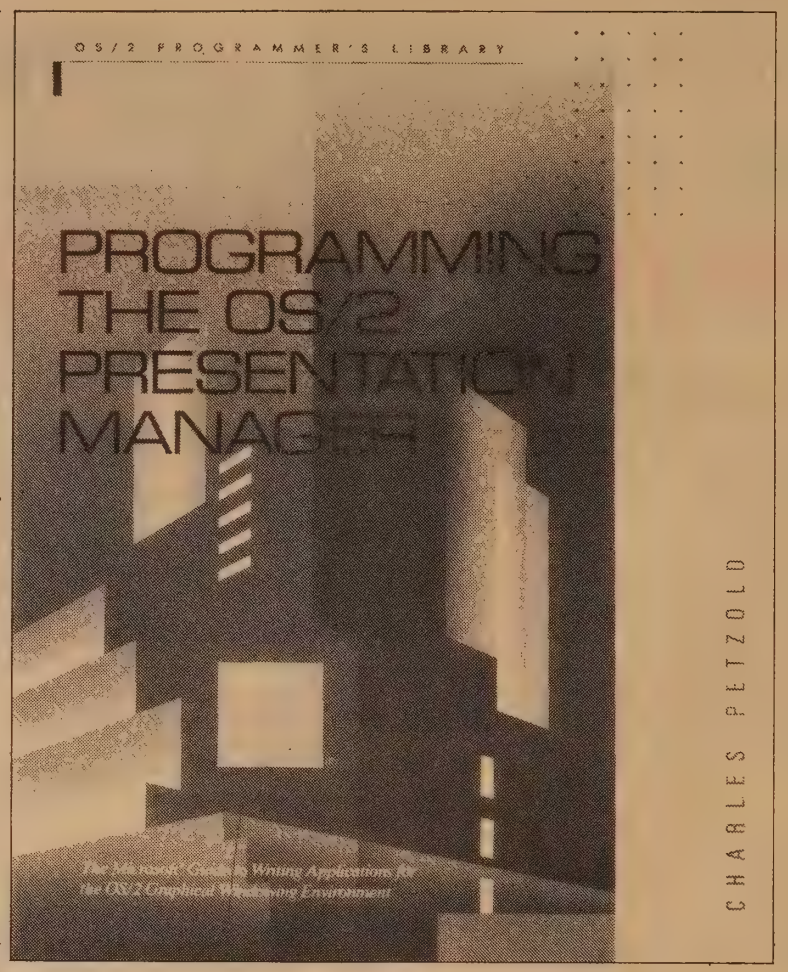

OS/2 PROGRAMMER'S LIBRARY
ADVANCED OS/2 PROGRAMMING
Microsoft PRESS
The Microsoft Guide to the OS/2 Kernel for Assembly Language and C Programmers
RAY DUNCAN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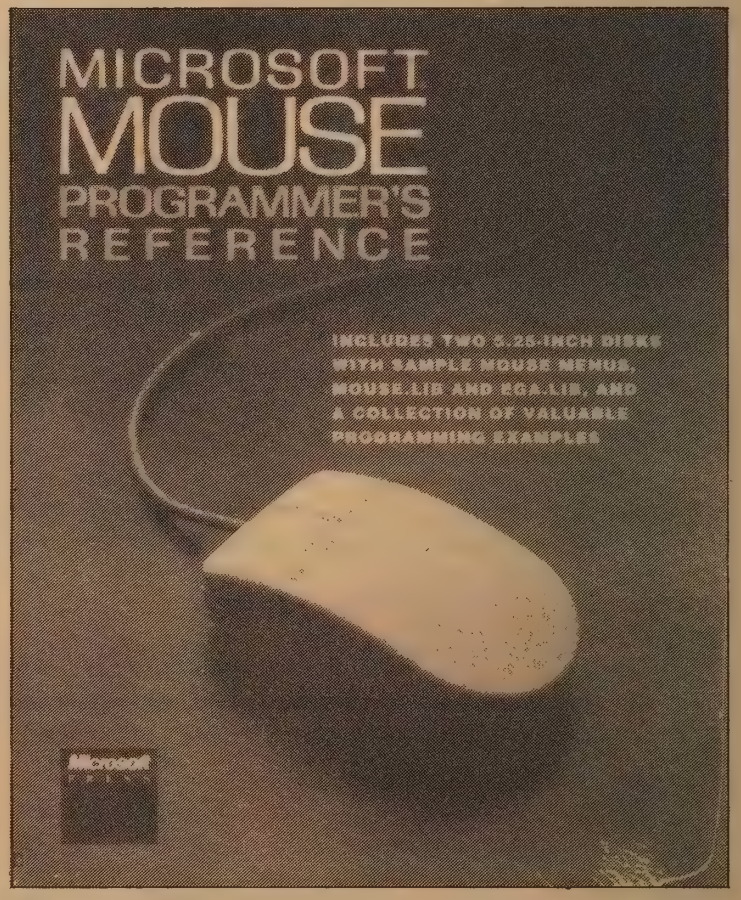
PROGRAMMING THE OS/2 PRESENTATION MANAGER
The Microsoft Guide to Writing Applications for the OS/2 Graphical Windowing Environment
CHARLES PETZOLD

Two New Books For Programming OS/2

If programming under OS/2 is more your thing, two new texts from Microsoft could help out. The first book, *Advanced OS/2 Programming*, offers authoritative information, expert advice, and great code examples in assembly language and C. Author Ray Duncan addresses a broad range of significant OS/2 issues including:

- Mastering the fundamentals
- Programming the user interface
- Programming mass storage
- Developing advanced techniques
- Customizing OS/2

A valuable reference section includes detailed information on each of the more than 250 OS/2 kernel calls in the version 1.1 applications programming interface. *Programming The OS/2 Presentation Manager* by Charles Petzold is another OS/2 text from Microsoft Press. It is designed to get the OS/2 application programmer—one with a background in Windows or with strong C experience—through the Presentation Manager system of windows, messages, and function calls. The author includes scores of valuable Presentation Manager programs and utilities written in C. ($24.95/29.95) Microsoft Press, 16011 NE 36th Way, PO 97017, Redmond, WA 98073-9717.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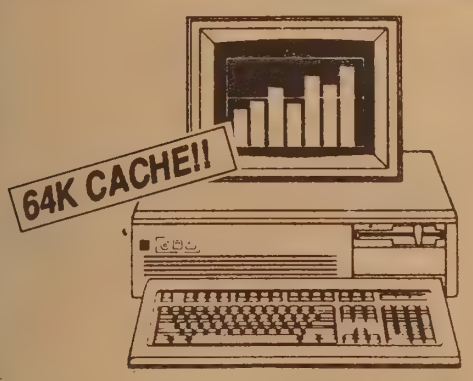

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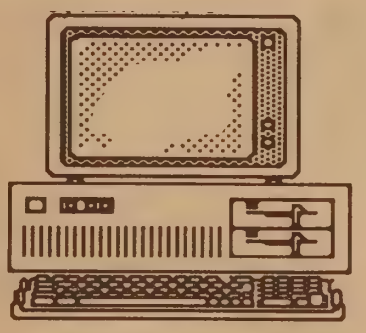
386sx



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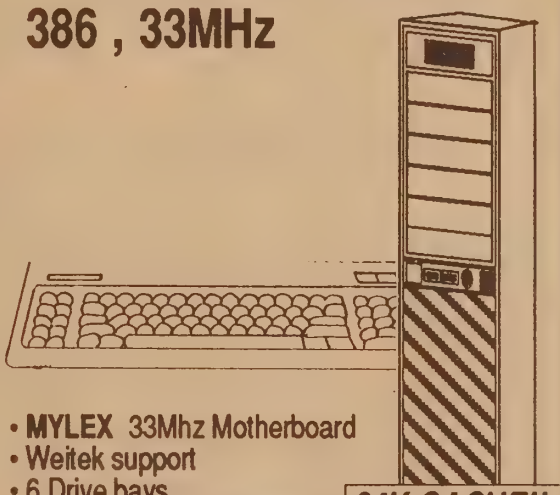

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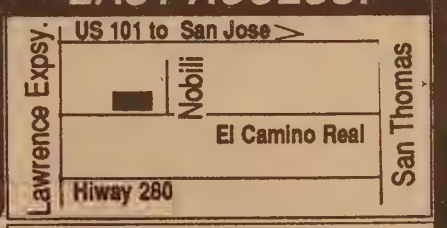

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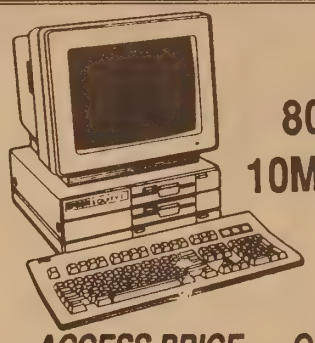

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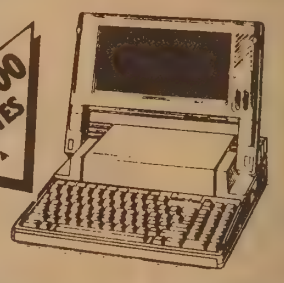

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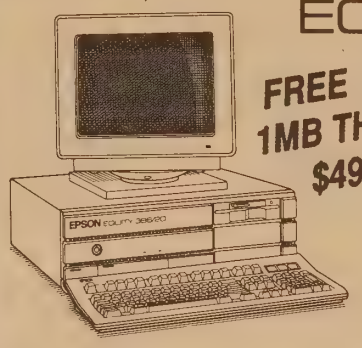

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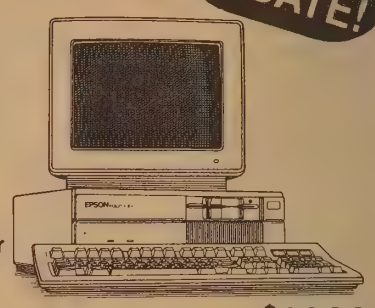

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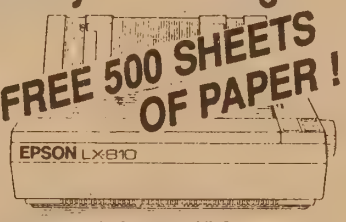

- 200cps superdraft ;30cps NLQ
- Easy typestyle selection
- Versatile Paper Handling
- Quick typestyle & function selection

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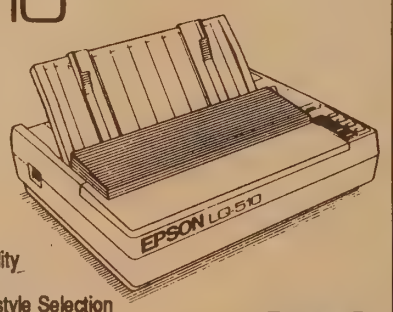
Letter Quality Excellence!



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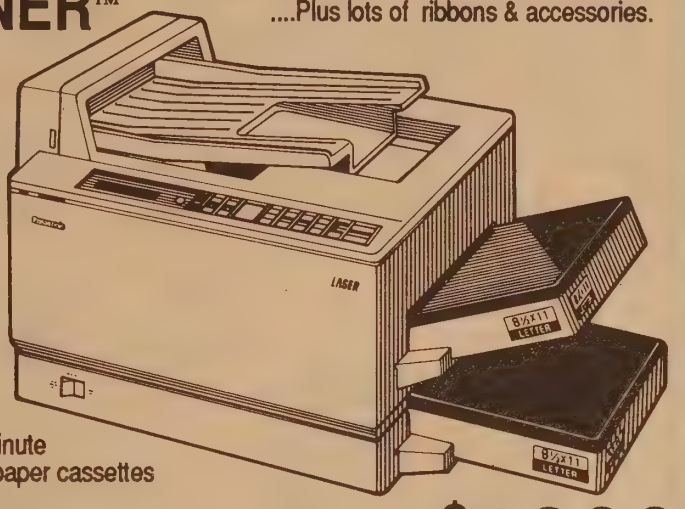

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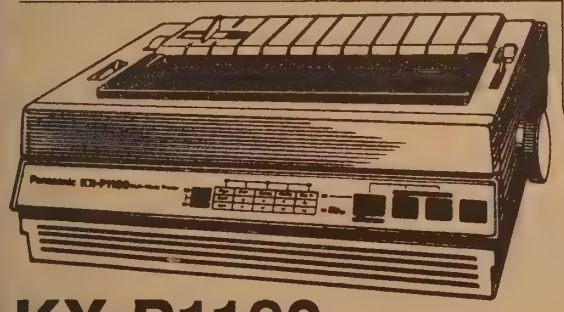

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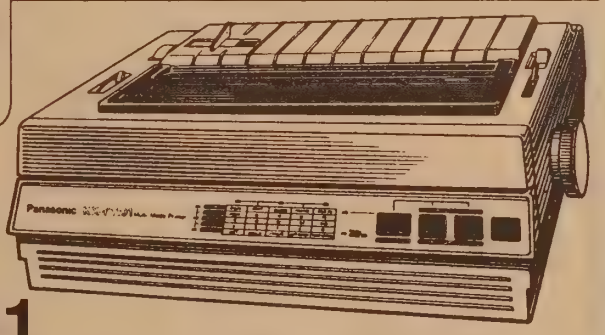

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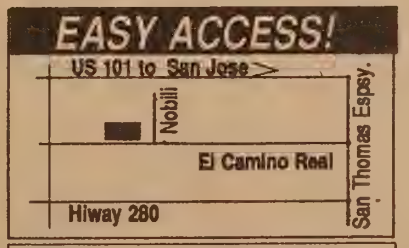

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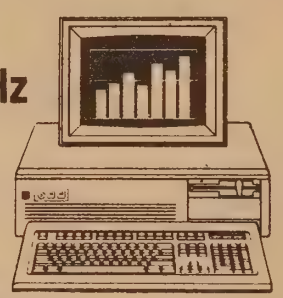

- 1Meg Memory
- FDD/HDD Controller
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- AT-Style Keyboard
- Monitor not included

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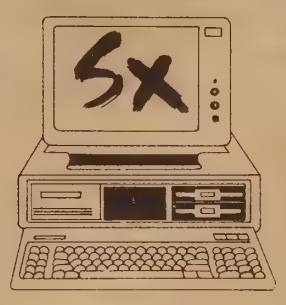
386SX 16MHz



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- 1MB RAM...Expandable to 8MB
- Parallel/Serial
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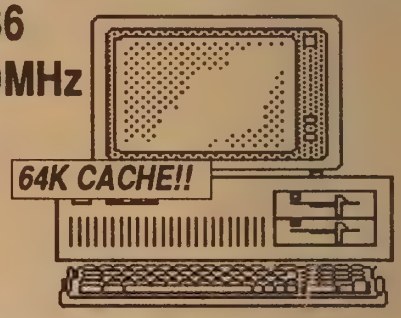
386 20MHz



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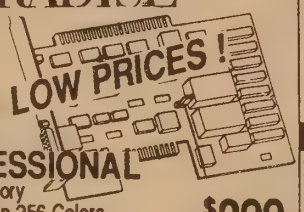

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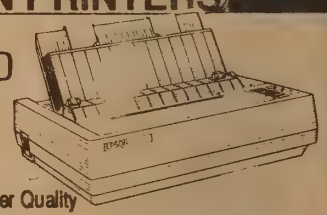
LQ-850



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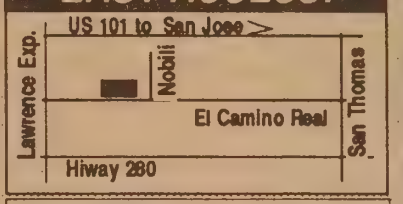

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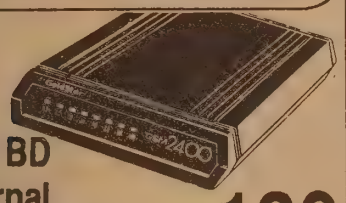

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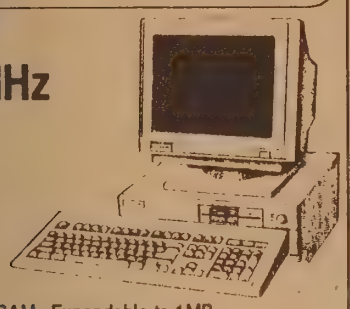

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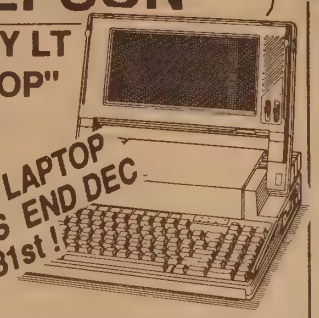

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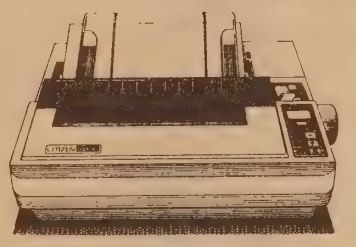

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- LCD Front Panel Displays
- Color Option Available
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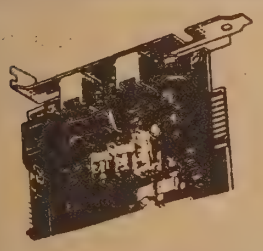

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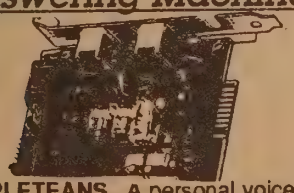

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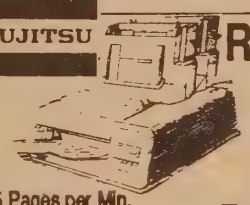

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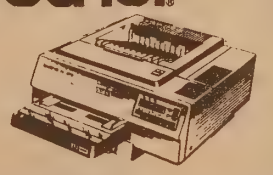

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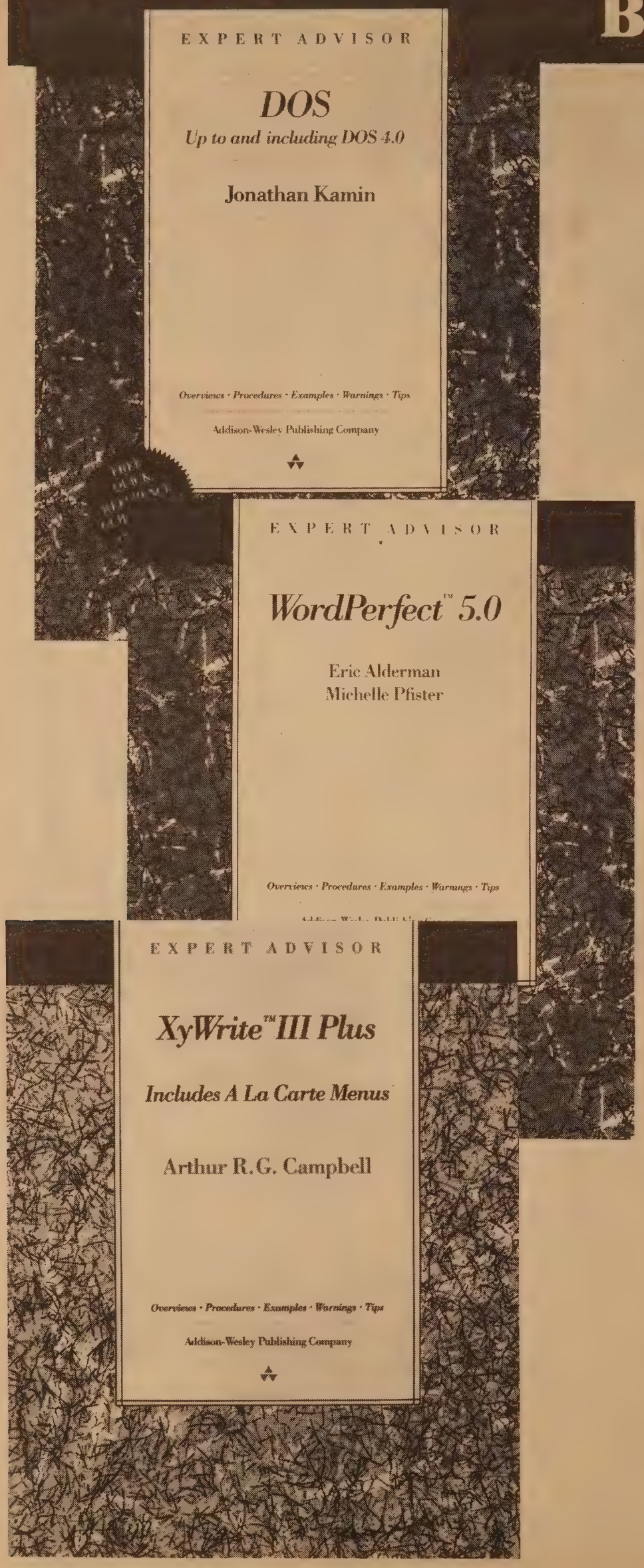

Expert Advisor Series Includes Three New Texts

Addison-Wesley has recently added three books to its Expert Advisor Series. The new texts include a guide to DOS through version 4.0, and two books on popular PC word processing applications.

Expert Advisor: DOS

This book by Jonathan Kamin is a complete reference to DOS. It covers every command, function, and feature of DOS versions 2.1 through 4.0, the newest release. *Expert Advisor DOS* is actually three books in one: a reference book, a book of practical examples, a collection of tips and pitfalls, and a series of tutorials on how to use each DOS command and function. In addition to the wealth of information included in each entry, you will find cross-referencing to other related topics and an index to the applications covered. The book includes a free DOS Quick Reference Guide, a $7.95 value. ($22.95)

Expert Advisor: WordPerfect 5.0

Authors Eric Alderman and Michelle Pfister have written a complete reference to this best-selling word processor for the PC. It takes you through every command, function, and feature of *WordPerfect* versions 4.0 and 5.0, the newest release. This volume explains the new features of *WordPerfect* 5.0 in detail, including the use of multiple fonts, page layouts, and desktop publishing capabilities. The authors cover such additional topics as style sheets, macros, and merge functions. This book is filled with practical, step-by-step examples and suggested uses for each command function. Includes a free *WordPerfect* 5.0 Quick Reference Guide, a $7.95 value. ($19.95)

Expert Advisor: XyWrite III Plus

This text by Arthur R.G. Campbell is a complete reference to Version 3.54 of this best-selling word processing package. It focuses on features that make *XyWrite* popular with writing professionals, like the capability to customize the program for specific vertical markets and the power to go right from the *XyWrite* disk to typeset copy. Also covered is the menu-driven interface, A La Carte. The author, an established authority on *XyWrite*, is currently a course developer for XyVision. He has used *XyWrite* through four levels of revision and has served as consultant to numerous businesses and publications on the applications of *XyWrite*. ($21.95)

All the above texts are available from Addison-Wesley Publishing Company, Inc., Route 128, Reading, MA 01867. (617)944-3700.

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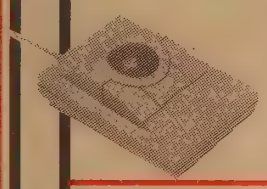

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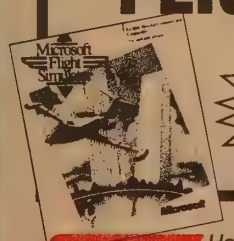

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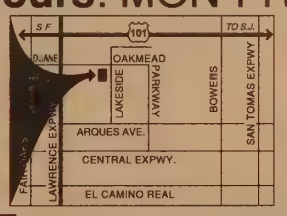

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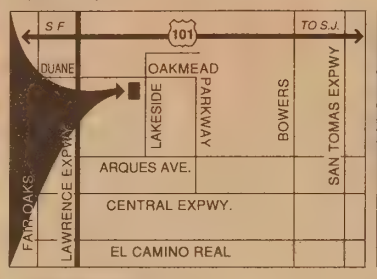

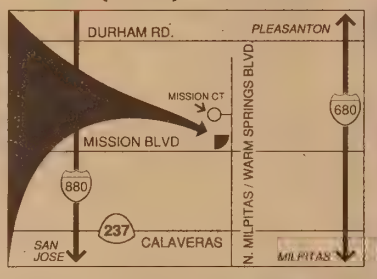

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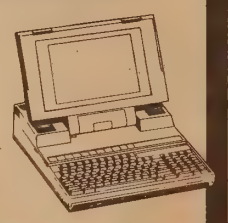

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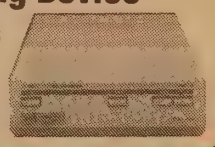

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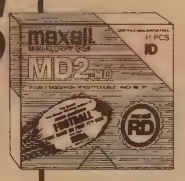

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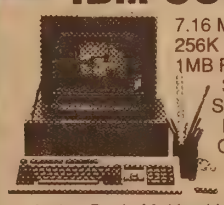

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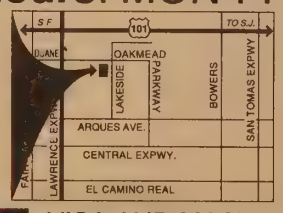

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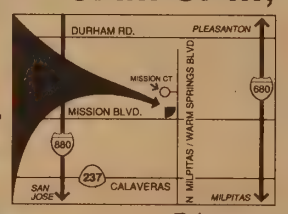

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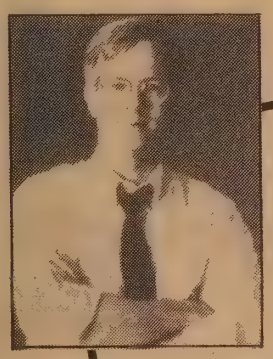

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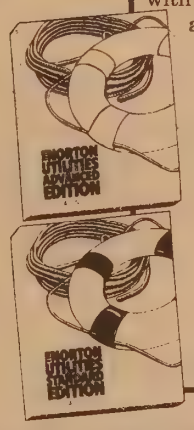

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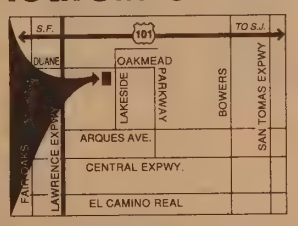

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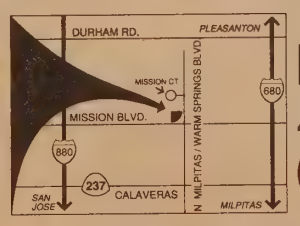

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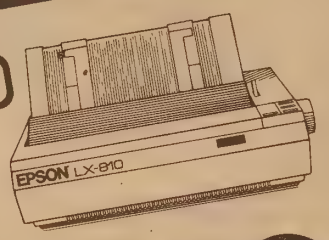

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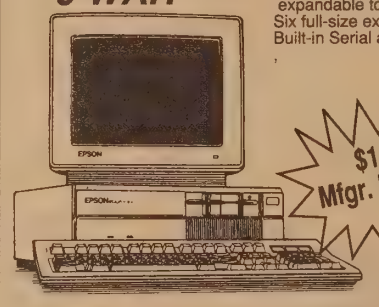

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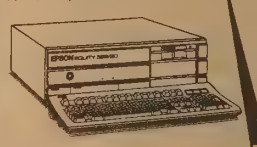

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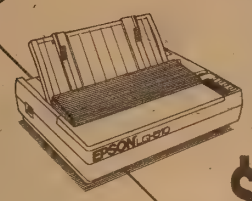

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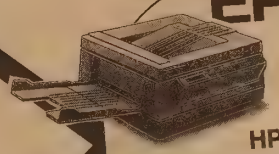

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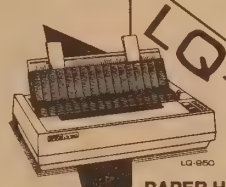

PAPER HANDLING MADE EASY
SmartPark features let you switch paper formats without removing hardware or paper; eliminate paper waste and accurately adjust top-of-form position.

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SUPERB LETTER QUALITY RESOLUTION
The LQ-950 prints crisp text and presentation quality graphics:
360x360 dpi resolution

FAST PERFORMANCE
The LQ-950 prints
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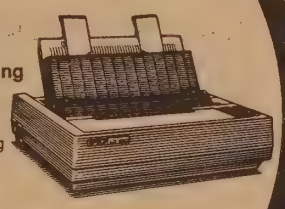
88 CPS in Letter Quality Mode

LQ-850
24-PIN PRINTER

The Standard Width LQ-850 is a high-resolution, letter quality computer printer with outstanding performance features.



SmartPark Paper Handling
Change from fanfold paper to single cutsheets or envelopes without removing tractor hardware
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88 CPS/NLQ
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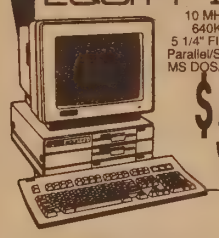

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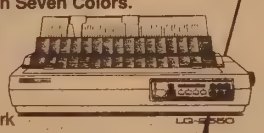
Highest quality 24-Pin technology for superior high-resolution text and graphics. **Prints in Seven Colors.**

Paper-Handling Versatility
SmartPark let's you handle fanfold paper single sheets,envelopes and forms.



Advanced Features
Selects printing modes,printer settings,SmartPark operations and page-format pre-sets.
LCD SelecType front control panel.
Prints 400 CPS Draft.
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Options include a dual-bin cut sheet feeder and pull tractor.

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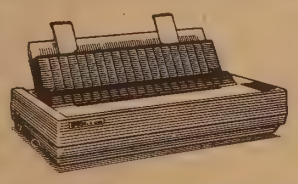
LQ-1050 24-PIN PRINTER



136 Columns Wide
264 CPS Draft Mode
88 CPS in Letter Quality mode for enhanced, high-resolution characters
Runs at surprisingly quiet 55 dB noise level
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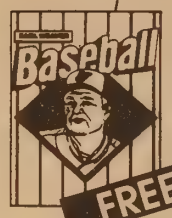

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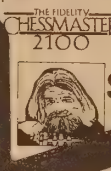

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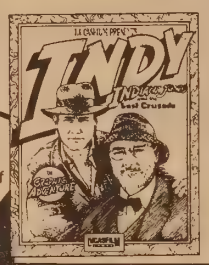

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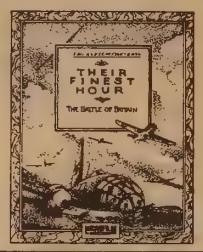

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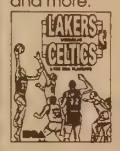

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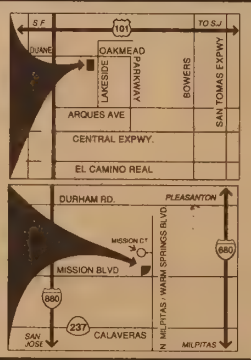

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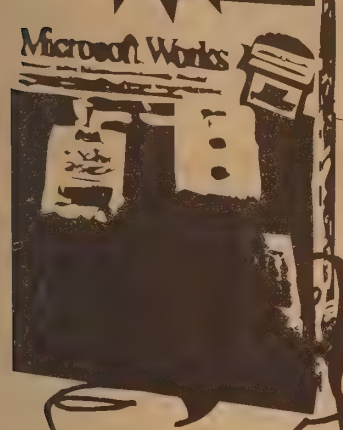

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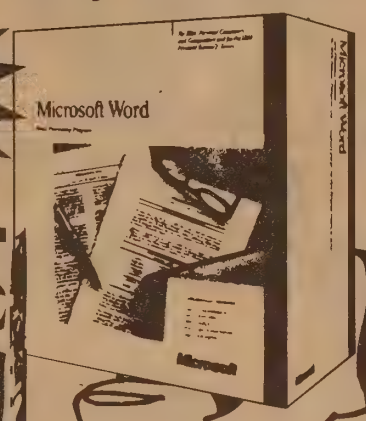

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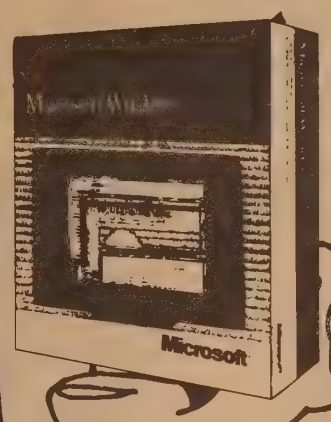

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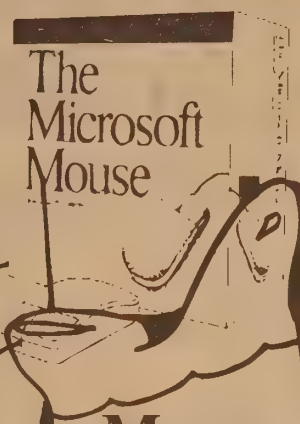

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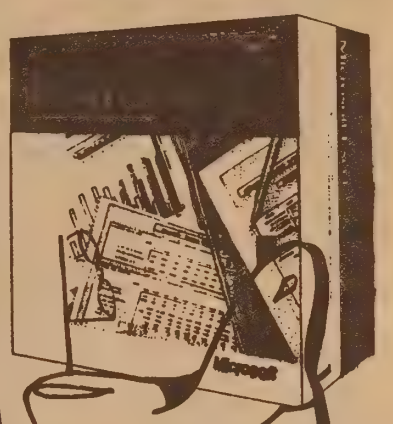

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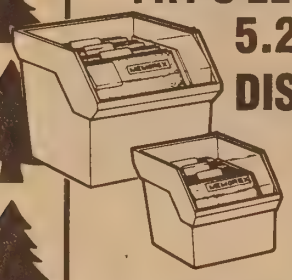

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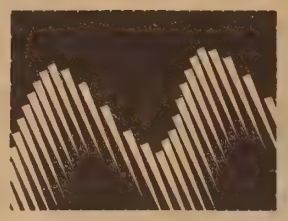

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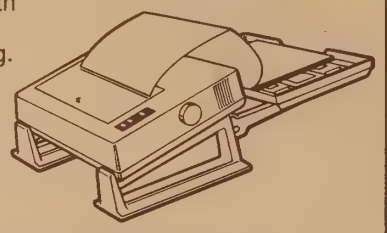

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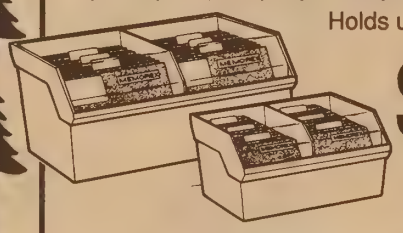

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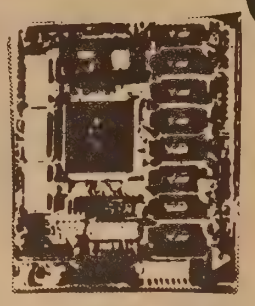

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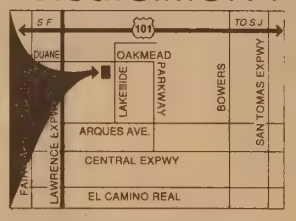

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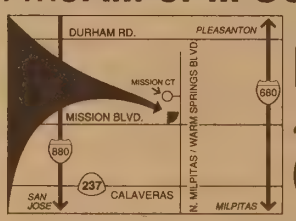

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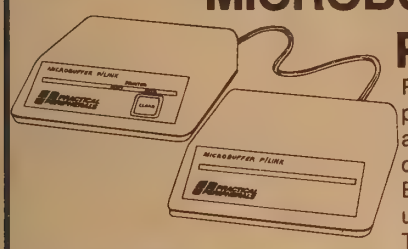

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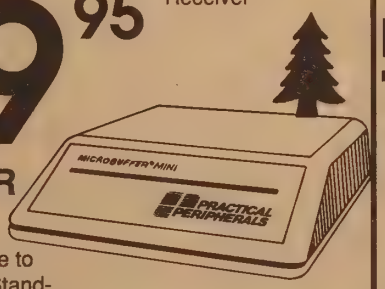

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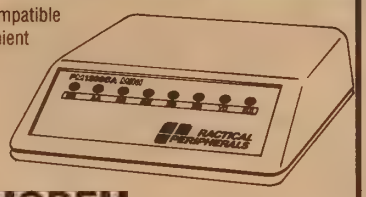

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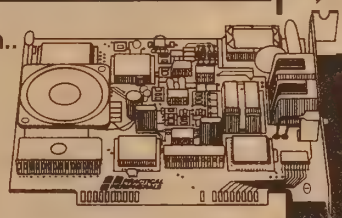

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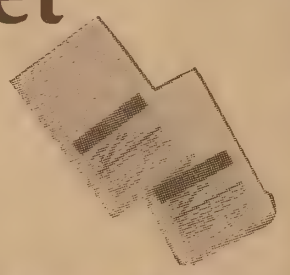

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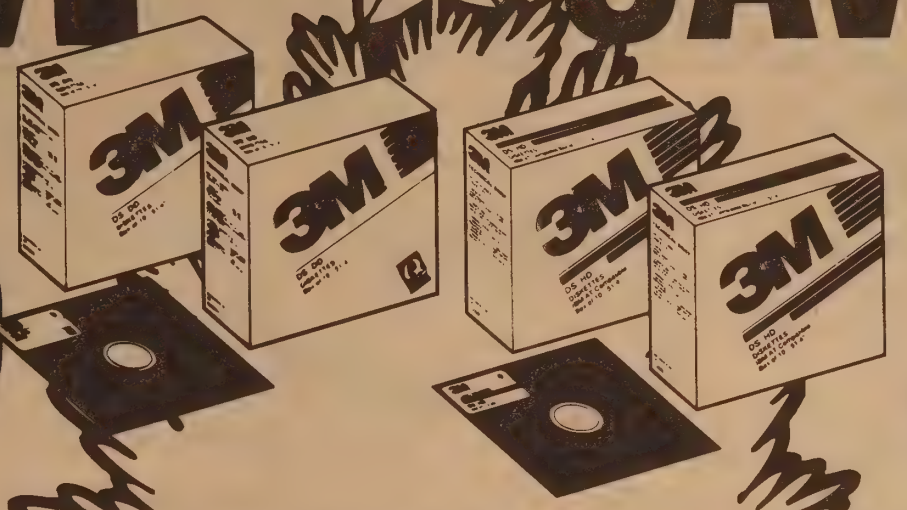

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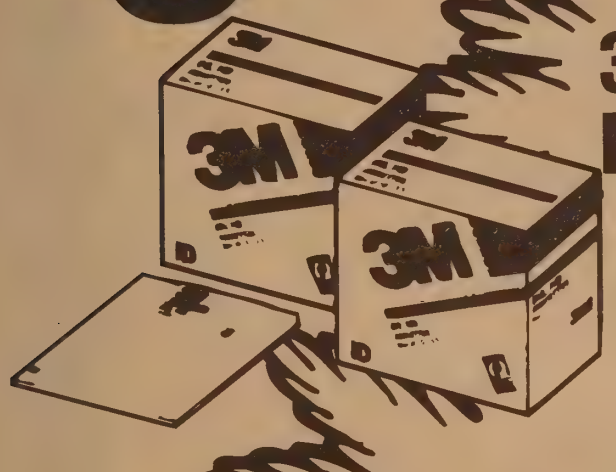

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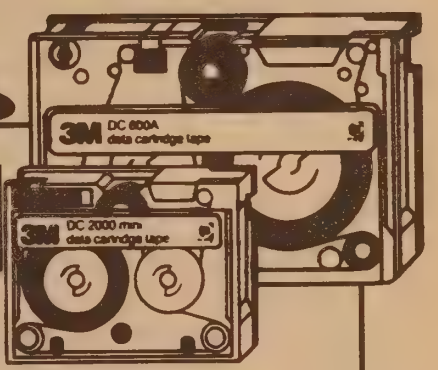

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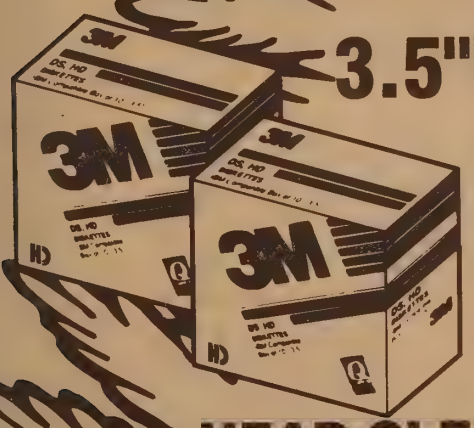

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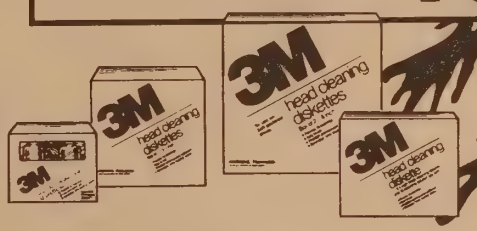

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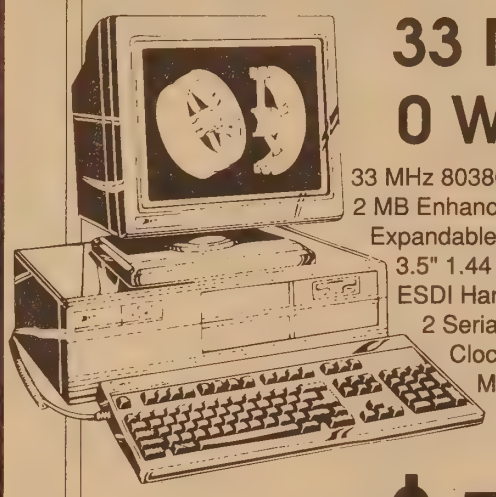

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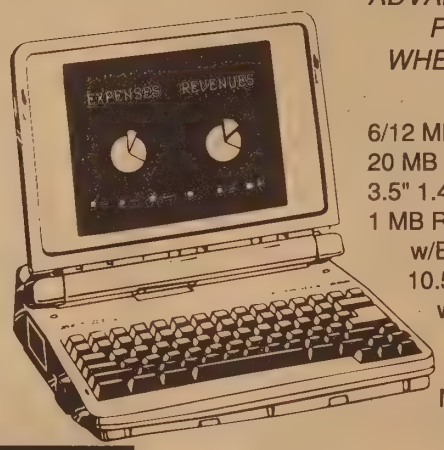

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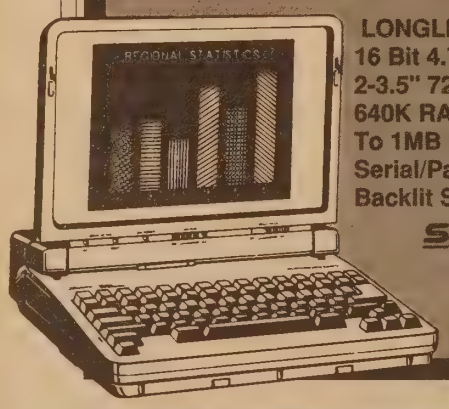

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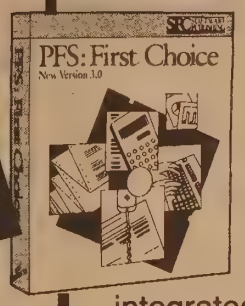

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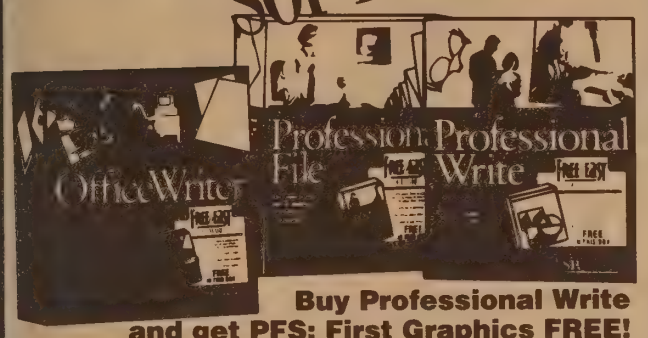

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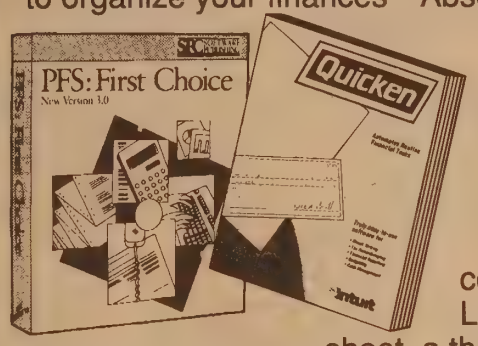

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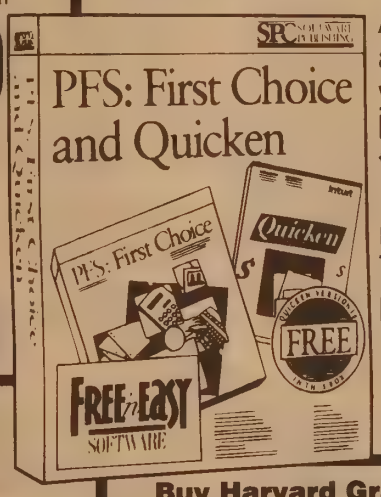

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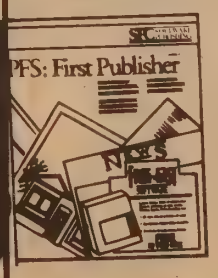

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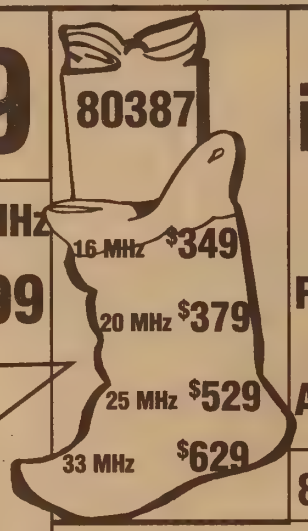

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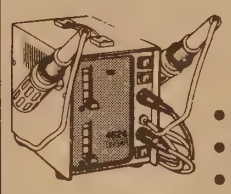

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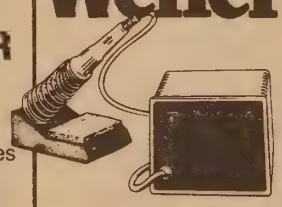

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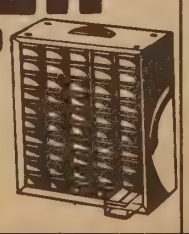

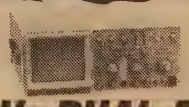

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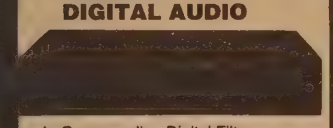

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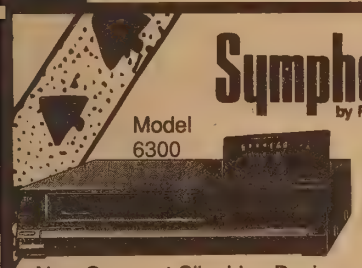

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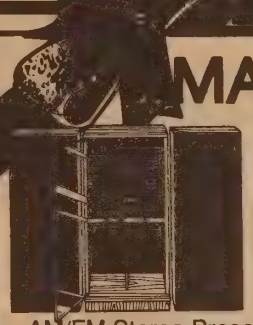

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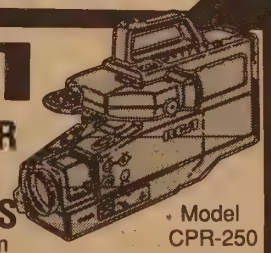

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BY MATTHEW LEEDS

AmiEXPO Report

If this year's AmiEXPO show in Santa Clara is any indication of the state of Amiga interest and development, then the Amiga is in for rough times.

Looking more like a swap meet than a real computer trade show, the show suffered poor attendance from both vendors and attendees (20% of the vendors listed in the show catalog were no-shows). Aside from NewTek and WordPerfect, exhibitors settled for the standard pipe and drape booths, often without any signage other than the white cardboard booth identifier hung from wire hooks at the back of the booth.

If you've ever attended a Macworld, a Video Expo, or other professional trade show, you'll understand what I mean. I could not imagine a corporate buyer from a major company (the type of account Commodore has said it's after) coming to the show and doing more than taking a quick look around and then leaving. There was no evidence that the Amiga is a computer to be taken seriously by business.

I could not imagine a corporate buyer from a major company coming to the AmiExpo and doing more than taking a quick look around and leaving. There was no evidence that the Amiga is a computer to be taken seriously by business.

Even with the overall unprofessional appearance of the show, there were some notable new products introduced, some innovative new ideas shown, and some noble attempts made. Although I'm uncertain whether the Amiga will ever have a shot at being accepted as a machine for general business use, it still attracts some of the brightest development talent.

•**A-Squared Distributions** showed *The Art Of GO*, a 4,000-year-old game of strategy. This is an excellent version of the classic, offering three modes of computer and human interaction, a running explanation of the computer's reasoning, annotation of games, a software tutorial, handicapping, and the ability to print out a game.

•**Advanced Gravis** showed an Amiga version of their Mousestick optical controller. The Mousestick is a 1200-line-resolution optical input device that looks much like a joystick. It can emulate either a mouse or joystick, has three programmable buttons, can be adjusted for any screen resolution, can be programmed and will store programming, and has excellent handling characteristics.

•**Brown-Wagh** showed a new version of *Pen Pal*, with support for changing font directories within the program, optional closing of Workbench on minimum memory systems, better printer support, and improved file export. The new version is a free upgrade to all registered *Pen Pal* users. They also showed a new business graphics program, *BGraphics*. This is the kind of software the Amiga needs to be accepted as a business solution. I'll be taking a look at this program when it's released later this year.

•**Centaur Software** was showing *Centaur World Atlas*, an educational computerized atlas. This appeared to be an import from Europe, with excellent graphics, but some problems in user interface. The current version was designed to run only from floppy, and you must re-boot to exit the program. With some additional work, this could be a useful and interesting program, but for now, I'd suggest a preview at your dealer's before you buy.

•**Creative Microsystems** displayed the MultiPort Board, providing RS-232 serial port, RS-422 Mac serial port, and DB-23 parallel port connections. Options include a SCSI hard disk interface and 2Mb RAM daughterboard. When used with the CMInet software, the MultiPort Board supports the AppleTalk Protocol, allowing access to a Macintosh AppleTalk network. You can currently gain access to a networked laser printer, read Amiga files between Amigas on the network, and exchange messages. In the future, you will be able to gain full network access to all hardware, write files remotely, and pass files between Macs and Amigas. Creative Microsystems is also working on a Digital Frame Buffer for the A2000 with genlock, 24-bit color, hardware pan and zoom, digital capture, and support for rendering software packages. More details as they come in.

•**The Desktop Advantage** introduced the Pro-Res Still Video interface. This is a color separator and enhancer that can be used in automatic operation with NewTek's *Digi-View*. It accepts a color video signal as input- and outputs-separated R, G, and B signals. Controls allow adjustment of the contrast, brightness, sharpness, color balance, and tint of the video signal. Used with *Digi-View*, it emulates the Digi-Droid, and sends each separated color as prompted. It works with any color-still video source.

•**Digital Animation Productions** showed the SANG transputer board for the A2000. The SANG board supports either the T800 or T425 transputers, supports up to 32 Mb per board, with a performance of up to 15 MIPS per transputer.

Although I'm uncertain whether the Amiga will ever have a shot at being accepted as a machine for general business use, it still attracts some of the brightest development talent.

•**Digital Creations** showed the Supergen 2000, the core of its new video system for the Amiga. The Supergen 2000 is the only internal genlock for the A2000 that transcodes between NTSC and Y/C video signals.

•**Elan Design** showed the new version of *InVision*, *InVision Plus*. The new version provides new effects, full ANIM format compatibility, and a new still-image capture capability that offers dramatic still-image quality in all resolution modes, including HAM.

•**Interactive Video Systems** continued to expand their hard disk support for the ReadySoft A-MAX Mac emulator. They now offer hard disk partitioning with both Amiga and Mac operating systems installed, one on each partition.

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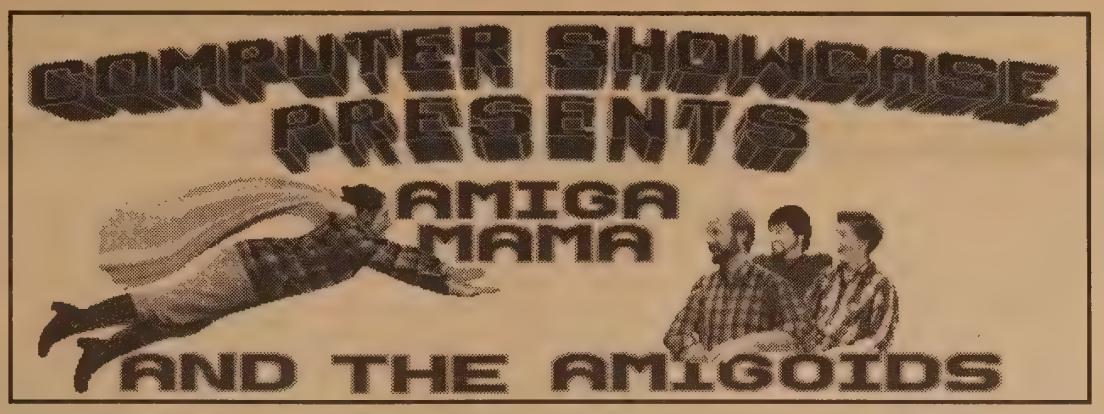
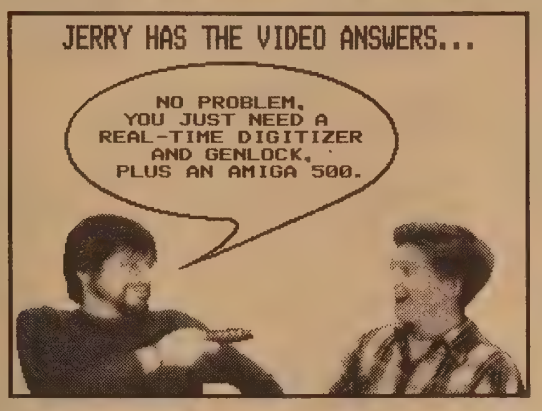
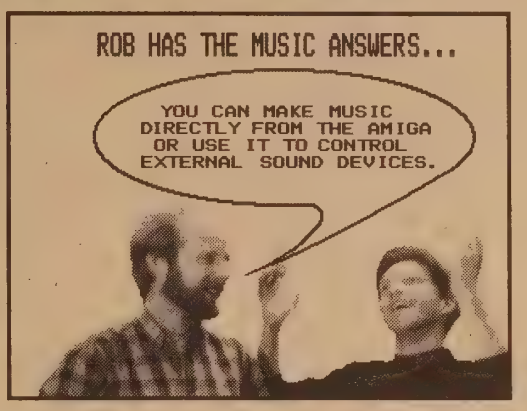
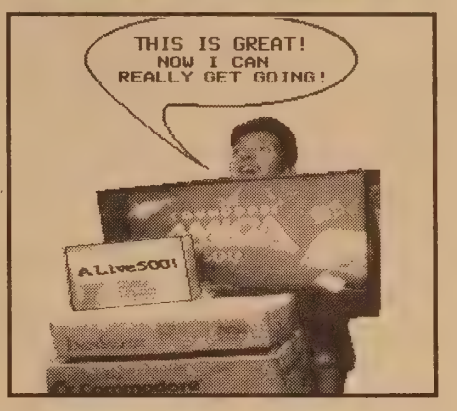
Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.









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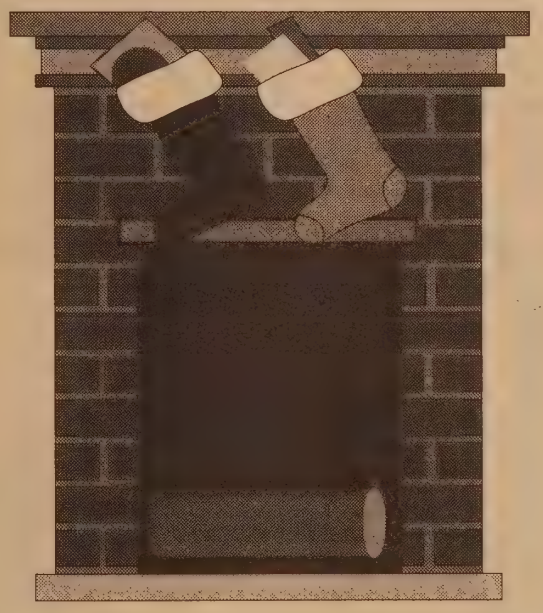

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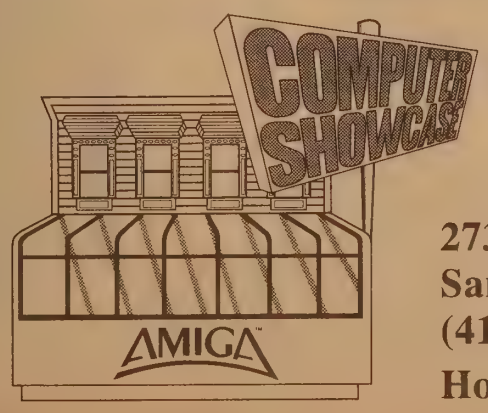

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•**Intuitive Technologies** showed the latest version of *UltraCard*, the hypertext tool for the Amiga. *UltraCard* V1.4 has expanded digitized sound capabilities and support for color cycling and overscan. Also announced was *UltraCard Plus*, an enhanced form of *UltraCard* that accepts external code modules that let programmers add their own features to *UltraCard* via XCODE modules. *UltraCard Plus* also allows multiple stacks to be open simultaneously, and supports communication between stacks.

•**LaserUp! Software** demonstrated *LaserUp! Draw*, a structured drawing program. Draw offers outline screen fonts, curves, auto-tracing, a halftone editor, rotated text, reflect, shear, rotate and scale, IFF and EPS formats, color separations, and PMS spot color. On-line help is also provided.

•**NewTek** showed the Toaster (again) and *Digi-Paint 3*. They also showed a new capture and display capability for *DigiView* that should become available soon. This new mode dramatically improves the quality of images digitized with *DigiView*, but it is not compatible with any other existing software, including *Digi-Paint 3*. NewTek will be releasing the details of this new format in hopes that other developers will add support for this new display mode.

•**Premier Software** displayed their collection of public domain and shareware software. Premier takes the time to sort and organize the vast flow of PD software, and makes sure that all doc files are accessible via icon, and that all support files are on the disk. Their entire collection is cataloged on a single disk. If you have trouble using other collections, these might solve your problems.

•**Taliesin** showed a preview of their structured drawing program. This looks to be a hot area, since Gold Disk's *ProDraw* has drawn lackluster reviews. Taliesin's *ProVector* offers support for IFF, PostScript, and their native format. It uses Bezier curves, supports an extended palette via the use of dithered colors (256 onscreen from 16 million), makes good use of the Amiga's Intuition interface, and heavily supports AREXX. This package should be out in the first quarter of next year.

•**Virtual Reality Laboratories** has acquired the rights to *Galileo*, now renamed *Distant Suns* to avoid trademark conflicts. The new version runs 300% faster and has a variety of new features, including full screen sky (all buttons hidden), new expansion disks, and additional star catalogs.

•**Word Perfect** recently started shipping the maintainance update to their word processing program, and they were demonstrating the improvements. The major changes are improved file requesters, better user interface, and improved response times.

•**Zuma Group** has released *TV*TEXT Professional*. It now supports EHB mode, 16 colors in high res, color fonts, and has added metallic, glow, and strobe effects, and color animation effects like glint and sheen. This new professional version is easier to use, and includes volumes 1-3 of *Zuma Fonts*.

That wraps up the show coverage. Over the next few months I'll be reviewing some of the software I picked up at the show. In the meantime, keep your eyes peeled for the Amiga commercial on TV, and the print ads appearing in major magazines. ■

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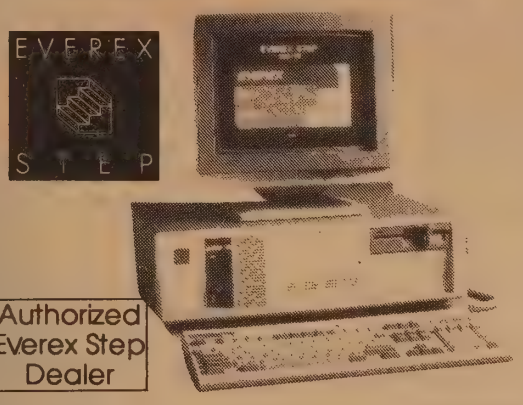

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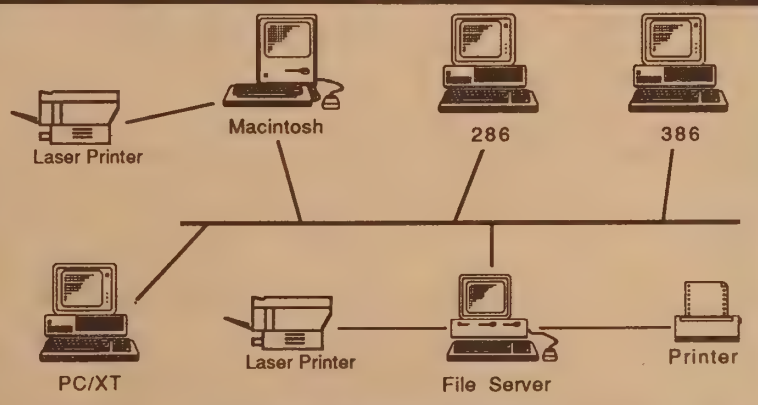

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BY SUZANNA MUSICK

Managing The Development Of A Custom Program

Those of you who have been reading this column for a while know that, as a rule, our consulting department does not advocate developing custom software programs. We strongly recommend the 80/20 rule: "Find an off-the-shelf program that satisfies 80% of your needs and learn to use it well." Most times the remaining 20% can be fulfilled with an external database, spreadsheet, or even, heaven forbid, a manual schedule.

Occasionally, however, due to the client's requirements, we are unable to locate that off-the-shelf program that meets the 80/20 rule. In such cases we resort to custom software development.

In the wrong (inexperienced) hands the development of a custom program can be (and usually is) a very dangerous tactic. Especially if this program is complex, or one that the operation of your business will depend on; you should proceed with extreme caution. You are opening yourself up for a myriad of problems if you are not completely familiar with the pitfalls that can trap you. And since most companies do not keep programmers on staff, you will be further exposing yourself by going to the outside for help.

Let's look at what can go wrong and how to avoid these problems. Some of the important concerns include contract (or lack thereof) problems, needs definition and program specifications, people skills, programming skills, cost, timing, bugs, training, support, documentation (user and technical), and ownership. Let's examine these individually.

Contract

First, and foremost, have a written and signed contract between you and the programmer you are hiring. Make sure it defines exactly what the programmer will do, for how much and when. Include the items listed below. Know where the programmer's responsibilities end and yours begin. Don't be caught later without an agreement. This step alone can save you lots of grief.

Needs Definition And Program Specifications

In developing a custom program, the user's needs must be clearly defined. This is normally done in meetings facilitated by a knowledgeable consultant and/or analyst. Following the completion of the analysis, specifications are written up for the users to evaluate. This often includes sample screens and reports and can be prepared either on paper or by using a software prototype program that creates an empty shell of what the program will look like for the users to examine.

Sample screens and reports are especially helpful for users who do not have any experience in developing software. It's the old adage: "A picture is worth a thousand words." When they see the input screen and report layout, they are better able to evaluate if what they are getting is actually what they want. *This* is the time to make changes. Once the actual coding has been done, it can be very difficult (and costly) to make changes. Modify the program while it is still on paper or a prototype.

Copyright © 1989 by Suzanna Musick. All rights reserved. *Suzanna Musick is a Manager in the Computer Consulting Department of Hemming Morse Inc., CPAs. Her experience encompasses a wide range of industries such as distribution, retail, construction, real estate, financial and professional services.*

People Skills

The person you rely on to develop and support your custom program should be a good communicator. This means they should be able to carry on an English conversation and explain technical matters in non-technical terms. If they tell you that the program should be developed in a 4GL program with SQL compatibility, you might want to know what that is and why. The programmer should give you an answer you can understand, and that doesn't make you feel like an idiot for asking.

The programmer must also be a good listener. They should be able to understand your requirements and ask clarifying questions when they are not sure of exactly what you are trying to accomplish. They should not be defensive with you, but help to guide you through the process.

Programming Skills

Just because someone has written a mailing list program, they're not necessarily a professional programmer. A small project like a mailing list can be fun and not too risky. Often someone who enjoyed a project like that will try to get other programming work. Don't let your company be the training ground for someone without experience.

Get a resume from the person. Check references. Ask to see examples of other programs they have written. Do you like the way the menus look? Do they use look-up windows to help the operator find necessary data? Are the screens crowded and hard to read, or do they flow in a meaningful fashion? Is color incorporated?

In other words, look before you leap.

In the wrong hands the development of a custom program can be (and usually is) a very dangerous tactic. Especially if this program is complex, or one that the operation of your business will depend on; you should proceed with extreme caution.

Cost

Whatever amount the estimate for the program comes out to, double it. If you can still live with the project, go for it. If not, you'd better seriously consider how important the program is, because 9.9 times out of 10, there will be events that cause the project to go seriously over budget. And, in the programmer's defense, these are usually due to user omissions or changes of requirements. A programmer with experience is normally pretty accurate about how long it will take to complete a project as it is defined—it's those undefined requirements that come along later that throw everything askew.

Also, find out what the programmer's hourly rate is. Find out at exactly what point in the project the estimate clicks off, and the hourly rate clicks on. Are they providing documentation, training, support, bug fixes? Be sure you know.

Timing

Again, double the time the budget says it is going to take and see if you can live with it. You may be pleasantly surprised by an on-time delivery, but don't risk a major event or transaction on having the program in place the day it is supposed to be delivered. Even if the programmer delivers on time, someone in your office is going to have to learn to use it and enter the data. This can be the most time-consuming step of all, because normally the person doing the setup also has other responsibilities that make up a full-time job.

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II Thou shalt not covet thy neighbor's costly system; purchase only to meet thine needs.

III Thou shalt choose a network with great popularity so that thou shalt be able to acquire advanced software in the future.

IV Thou shalt not waste thine existing hardware resources for lack of a flexible operating system.

V Thou shalt not restrict thyself to one brand of computer and thereby lose thine hardware independence.

VI Thou shalt appoint a network administrator to monitor security and establish training procedures.

VII Thou shalt choose thine computer vendor carefully and judge ye surely that they have proven capability to keep thee up and running. (Thou canst not go wrong with vendors whose names begin with "R" and sound like large African beasts).

VIII Thou shalt teach thine employees to use thy system and in this manner shalt thine profits be fruitful and multiply.

IX Thou shalt acquire network versions of software packages so that all employees can use them, and thou shalt use thine creativity to expand the usefulness and productivity of thine system.

X Thou shalt have proper precautions for backing up daily and for protecting against power storms and other acts of thou knowest who.

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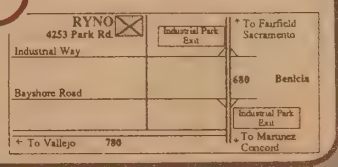

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Bugs

I don't care how competent a programmer is, there will be bugs in the software. These are not intentional; it is just a fact of life that a program performs differently once data starts accumulating and users start putting it through the paces. Any qualified programmer will test the program prior to installing it, but they will not be able to use it to the extent, and in just the same way, that you will be asking it to perform. Some programmers fix software bugs at no charge for up to 30 days. Be sure you know what the policy is of the programmer you are employing. And be prepared to pay for their time fixing things that do not relate directly to the software; e.g. hardware problems.

Documentation—User And Technical

Most programmers hate to write user documentation. They like the nitty-gritty programming part, and by the time they are done with the coding, they aren't very enthusiastic about writing a user manual. And in many cases, you really don't want a programmer writing user documentation. Programmers look at the program in a totally different way than a user does. A user sees the screens and the data entry fields; a programmer sees right past that to the logic of the system, and sometimes the documentation suffers because of the differences in vision.

Many programmers hire professional writers to compose user manuals, and I highly recommend this approach. Then each person is doing what they do best and you benefit because the end result is a usable product.

The programmer should provide the technical documentation, however. This should describe the logic, file structure, and data flow, so that if another programmer has to work on the software there's a map to lead them through the process.

Training

Training should be spelled out in your original agreement. How much is going to be provided, and to whom? It is usually preferable to thoroughly train one or two people in your organization and then have them train the other users (the "train the trainer" approach).

The programmer will usually insist that only one or two people be allowed to call their office for support. This is because if every user at every company the programmer did work for called asking questions, they would never get any programming done.

Support

Be sure you know what the programmer's policy is for providing on- going support. How much is it going to cost you? Do they have an annual fee, or is it strictly on an hourly basis? Do they guarantee you a specific response time? Again, go into a project of this magnitude with your eyes open.

Ownership

And finally, ownership. Once all is said and done, who owns the software? Can you or the programmer market and sell it to other potential users? Can you make unlimited copies and let as many people use it as you want? Can you freely copy the documentation? Do you have source code (the original program that was typed in at the keyboard by the programmer) or a compiled version which allows you to operate the program without the actual source code? Be aware that the copyright normally goes to the programmer who wrote the software, so if you want another arrangement, spell it out.

You may be pleasantly surprised by an on-time delivery, but don't risk a major event or transaction on having the program in place the day it is supposed to be delivered.

Conclusion

I want to conclude this article by praising the great programmers I know who do not allow the above issues to destroy a project. They are the ones whose sole business is programming and who have been writing custom programs for years. They are also the ones that I entrust my clients to, and who have proven to be reliable over numerous projects. They do what they say they are going to do, when they say they are going to get it done, and at the price they quoted.

But they are, unfortunately, the exception, rather than the rule. My final advice: Caveat emptor! ■

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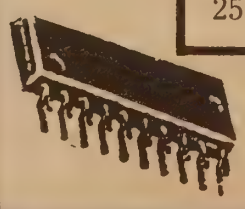

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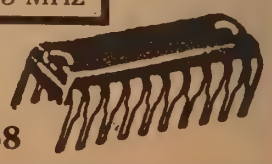

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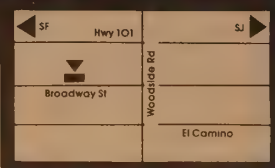

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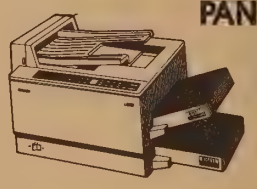

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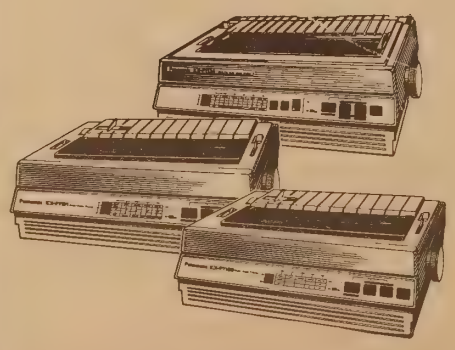

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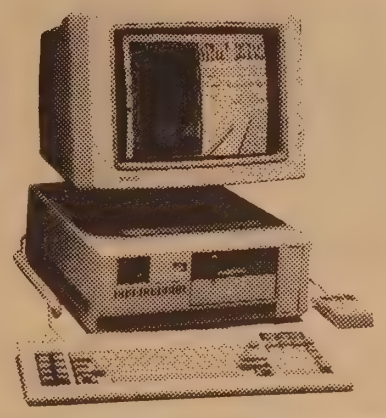

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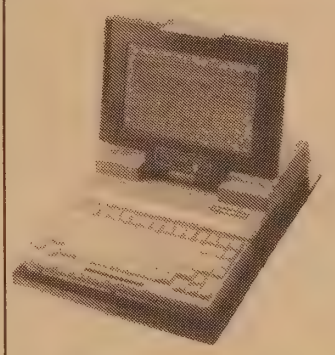

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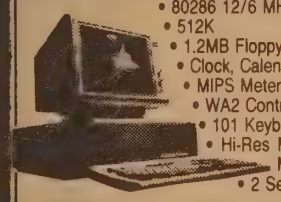

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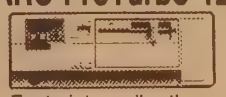

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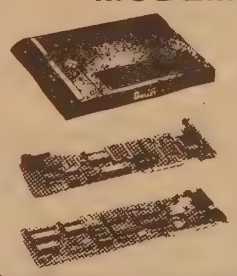

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BY DAVID HAWKINS

Let's Play

Games For The ST

Just when I think I've gotten over my addiction to computer games, a new batch shows up. Unfortunately I can't write this column and play games at the same time, so I'm taking a break.

Shufflepuck

The game I've had the most fun with is *Shufflepuck Cafe*, from Brøderbund Software, 17 Paul Drive, San Rafael, CA 94903. Good graphics, and challenging enough to keep my interest, but also simple enough for me to get addicted.

This game comes with a poster that shows the opening screen —nine opponents that you have to beat in a tournament. You can also play them individually. The back of the poster describes each of the other players and gives some hints on how you might want to play them.

If you click on a character, you start up an individual game. This also allows you to modify your paddle, if you want to change your odds. If you click on the "droid," you can modify his characteristics as well.

All of the characters are interesting, and make interesting movements and sounds during the game. There's a nerd who says "Nice shot!" each time you smash a shot past him. Also, there's an alien whose eyes are at table level—his eyes cross when you get a shot past him and he sniffles a little when you beat him. I like the lizard that takes a drink of champagne each time he gets a point—but the alcohol seems to affect his play after a while.

I really like this game. I'm about halfway through the tournament. This one's a nice game to go back to from time to time.

Jump On The Cycle

Slightly more complex is *Powerdrome* from Electronic Arts, PO Box 7578, San Mateo, CA 94403, (415)572-ARTS. You're racing a jet-powered cycle that has different types of aerofoils. This game is so complex that I had to read the manual—and even then I was pretty frustrated. Then I found a section at the end called "Piloting Tips" that helped me get the cycle around the track a few times.

In general I find that riding/flying simulation games get too technical for me. If this is the type of game you like, I'd recommend that you stop by a dealer's and see what some of these look like. *Powerdrome* might be for you, but three times around the oval practice track is more than enough for me.

Arduous Growth

The next two games are from SSI, 675 Almanor Avenue, Sunnyvale, CA 94086. The games are similar, even though one of them is set in the Dungeons and Dragons world, and the other is from the far-off future. Both involve choosing a character or a team, then slowly providing them with training and equipment. Where one game has a magic-user, the other has the ESPer.

Hillsfar

The Dungeons and Dragons game is *Hillsfar*. It's actually labeled as an Official Advanced Dungeons & Dragons Computer Product. You are camped outside the city of Hillsfar and can create characters to go into the city. They can steal items, explore buildings, pick locks, train at the target range, and visit the guilds.

Some parts of *Hillsfar* are arcade-like. When you're riding a horse you have to duck under limbs and birds and jump various obstacles. Blow it too often, and your horse will ditch you and you'll have to walk. When you're exploring buildings in the city there's a limited amount of time to pick locks, open cases, and find the exit.

I think that *Hillsfar* is playable, but I don't find it too exciting. The graphics are okay, but don't show what the ST is capable of. I think that some companies port games from the IBM or the C-64 without any thought to making the game look as good as possible on the new machine. *Hillsfar* isn't up to the level of *Phantasie II* or *III*, both of which are also from SSI.

Then To The Stars

Star Command was the second game from SSI. I wasn't able to get excited about this one at all. The crew selection process is about as boring as it is possible to make it. Again, comparing it to *Phantasie II* or *III* might have given the programmers some idea of how to make it more interesting in the startup section of the game.

The second reason I didn't play it much was that SSI said this release copy had a virus in it. The replacement copy hadn't arrived by deadline, and I wasn't that crazy about playing it too much—and sure didn't want to install it on my hard disk! Maybe this is a reminder that when you play a game, from whatever source, it's a good idea to unplug the hard disk and just play the game off of floppies.

The game I've had the most fun with is Shufflepuck Cafe, from Brøderbund Software. Good graphics, and challenging enough to keep my interest, but also simple enough for me to get addicted.

Not Exactly CTS

In an earlier column I mentioned having some pain in my hands/wrist that I thought was Carpal Tunnel Syndrome. I finally went to the doctor last Friday and it's not exactly CTS, but something similar. She gave me a wrist splint to wear and in just two days all the pain cleared up. Kind of makes me wish I'd gone in four months ago when this started. ■

Copyright © 1989 by David Hawkins. All rights reserved. *David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco. Both monitors, an Okimate 20 color printer, and disks are all over the room.*

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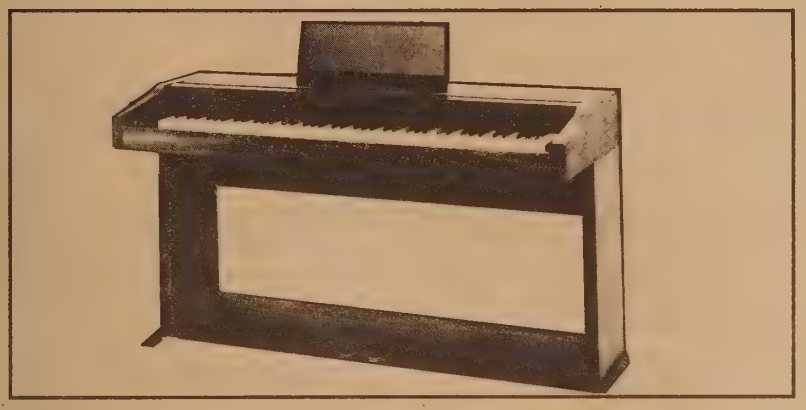
The 100 programs on the Ensemble Grande Mark III also offer the same high-quality sound samples as Kurzweil professional products, including the Kurzweil Grand Piano, strings, choirs, trumpets, pipe organ, and many more. The Mark III features an elegant dark rosewood open-spinet cabinet, an 88-note weighted keyboard, and the same powerful 6-speaker sound system as the Mark IV.

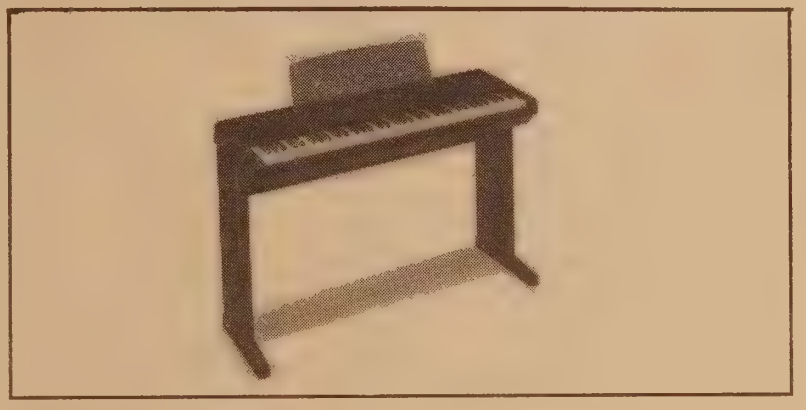
Kurzweil Ensemble Grande Mark IV

The Ensemble Grande Mark IV is a Kurzeil spinet piano with an 88-note balanced and weighted keyboard. Under the keys, the Mark IV's complement of 100 sound programs offer more musical variety than ever...including acoustic and electric pianos, strings, flutes, brass, and a large selection of drum and percussion sounds. It's all housed in a full silhouette cabinet for a totally enclosed spinet design, and played through a self-contained bi-amped stereo audio system with four 25-Watts amplifiers and six wide-range speakers.



Kurzweil Ensemble Grande EG-20

The Ensemble Grande EG-20 offers the same high quality sound of the Mark III and Mark IV for a modest investment. The EG-20 features an 88-note balanced and weighted keyboard, a self-contained stereo audio system with two 25-Watt amplifiers and four high quality speakers, sixty internal sounds (including grand piano, electric piano, strings, and bass), plus a ROM card slot which accepts additional sounds stored on accessory SoundCards™.



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BY BENNETT FALK

The Meeting Of Parallel Minds

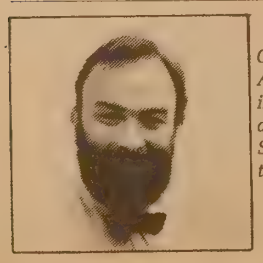
No matter what you may have read, it is not John von Neumann's fault.

In the late 1940s, von Neumann, a mathematician at the Institute for Advanced Studies, and some of his colleagues worked out the architecture of what would become the modern computer. Their machine had facilities for controlling its own operations, for performing calculations, and for basic input/output. It also had a small reservoir of memory from which instructions and data were loaded into the processor's registers for execution in an orderly sequence. This architecture has proven to be remarkably robust: it has persisted through successive revolutions in technology to become the basis for the workstations and personal computers that dominate the present computer market.

However, computers implementing von Neumann's architecture all are plagued with one serious problem: while information is copied from memory into a processor's registers, the processor itself does nothing. An unnaturally low ceiling is imposed on the computer's performance. This latency or self-imposed idle time is frequently called "von Neumann's bottleneck." Of course, von Neumann himself is hardly responsible for the relative speed of memories and processors, and frankly, the distinguished mathematician deserves a better namesake.

Much of the recent work done in computer and processor design is preoccupied with resolving this bottleneck or, at the very least, mitigating its influence. At one extreme, this work has resulted in new processor designs. One effect of reduced instruction set (RISC) technology, for example, is to reduce latency by streamlining what the CPU reads from memory and how it reads it. At the other extreme, there has been renewed interest in "parallel" processing.

Parallel processing is the attempt to improve a computer's throughput by using multiple processors to perform simultaneously jobs that a single processor computer would have to do one after another. This general description leaves much to the imagination: we have not yet said what a "job" is, or how the multiple processors are connected. There is nothing peculiar about the processors that participate in a parallel architecture. The individual processors are subject to the usual constraints, but their activities are coordinated in such a way that these limitations are irrelevant.



Copyright © 1989 by Bennett Falk. All rights reserved. *Bennett Falk lives in the Bay Area, writes when he can, and hopes for the best. He works for Sybase, but the opinions and attitudes expressed here are his own.*

A Short History Of Parallel Processing

The idea of multi-processor computers performing multiple jobs simultaneously is nearly as old as von Neumann's single processor architecture. In the late 1950s, both IBM and Burroughs produced machines that could do some things in parallel. Ten years later a 64-processor computer known as ILLIAC IV was built at the University of Illinois.

The early attempts to build parallel processing computers were not particularly successful commercially. The technology was costly and difficult to control, but all the same, a certain architecture for multi-processor computers emerged.

The first parallel processing computers allowed multiple processors to share the same memory. In the simplest case, this is accomplished by putting all the processors on a single "bus" that connects to memory. Processors sharing a common memory are said to be "tightly coupled." Because the processors hold memory in common, they can communicate through global variables whose memory addresses are available to all the processors.

In the absence of truly high-speed network technology, shared memory is a perfectly reasonable medium for this sort of communication. Each new processor added to such a system increases both the volume of traffic on the bus and the likelihood of contention between processors for memory addresses. At a fairly low level, the benefit from additional processors begins to decrease.

In recent years, tightly coupled multi-processor designs have become more sophisticated. Some manufacturers use a network of switches to route memory requests and reduce contention. The network of switches grows as processors are added. Other manufacturers reduce bus traffic by using more refined protocols between processors and memory over a common bus. These advances have produced excellent shared memory machines with four to 32 tightly coupled processors.

In 1985, researchers at Caltech proposed a different approach to parallel processing. (See "The Cosmic Cube" by Charles Seitz in *Communications of the ACM*, vol. 28, number 1.) The prototype "Cosmic Cube" computer featured 64 nodes: "loosely coupled" processors with local memory connected by a high-speed network over which messages could be passed between processors to coordinate execution. The project tested a design that was targeted for nodes consisting of a single chip, but the processor used to test the design was the familiar Intel 8086 with 8087 math co-processors. In 1985 it was reported that a 64-node Intel-based Cosmic Cube could perform some calculations five to ten times faster than a VAX 11/780.

Commercial implementations of the Cosmic Cube design followed shortly after the report from

Computers implementing von Neumann's architecture all are plagued with one serious problem: while information is copied from memory into a processor's registers, the processor itself does nothing. This latency or self-imposed idle time is frequently called "von Neumann's bottleneck."

Caltech appeared in print. By 1986, cubes with the capability of coordinating thousands of individual processors had been announced.

The "cube" design is a powerful one, but it makes serious demands on the application programmer. Because there is no common storage shared by all the processors, the programmer is responsible for moving the relevant data to the appropriate node. In addition, each node runs what is in effect a separate program, and this requires that at the outset the job to be done must be "decomposed" into tasks that are logically independent of each other and susceptible to parallel execution.

Software tools are needed to take advantage of hardware designs like the Cosmic Cube. The programmer needs facilities for managing the various threads of any process that executes in parallel, and languages like Ada, Concurrent C, and Occam have begun to address these needs. Quite apart from language features, programs written for parallel execution exercise algorithms in a different way from their sequential counterparts, and the art of programming for a parallel environment is still not fully understood.

Yes, But...

What, finally, does all this have to do with UNIX? The work that has been done on hardware and software development for parallel processing systems remains esoteric: as exciting as it is, very little of this work is available to users.

UNIX is one of the few points of contact between computer users and developments in the field of parallel processing. With relatively few modifications, companies like Pyramid Technology and Sequent have already adapted UNIX to run on multi-processor hardware. Typically these adaptations happen at the kernel level with no impact on the user interface. Users are free to deal with the system the way they have always dealt with it and still reap the benefits of parallel processing. ■

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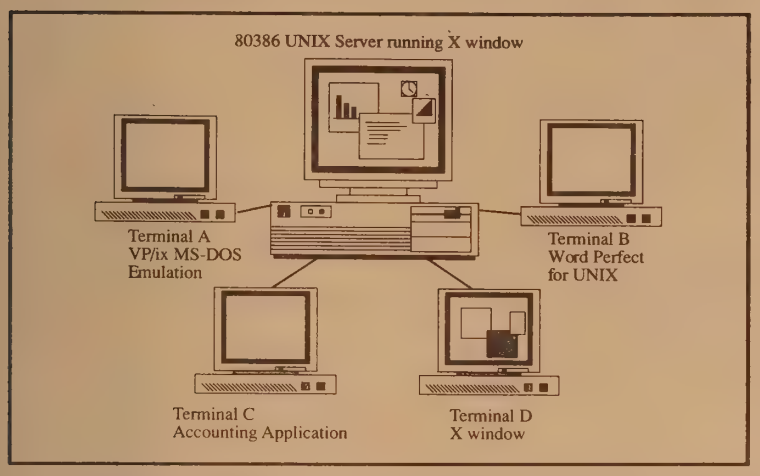

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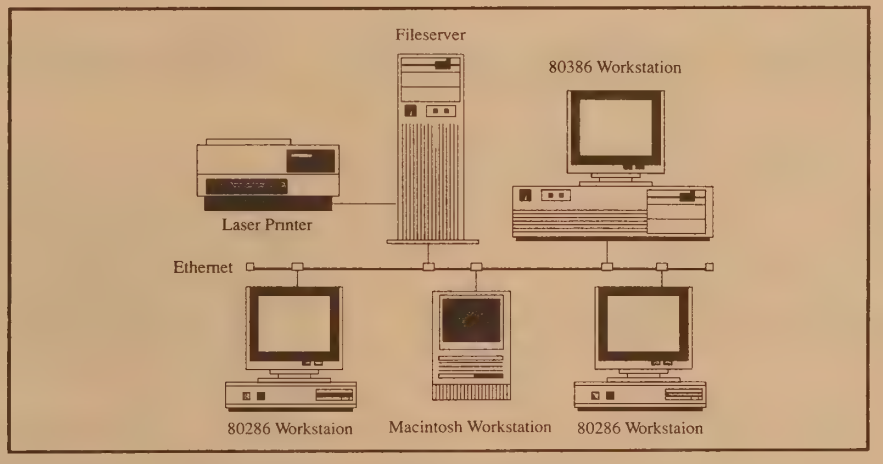

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MAC @ WORK

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The Versatile, Powerful Macintosh IIcx

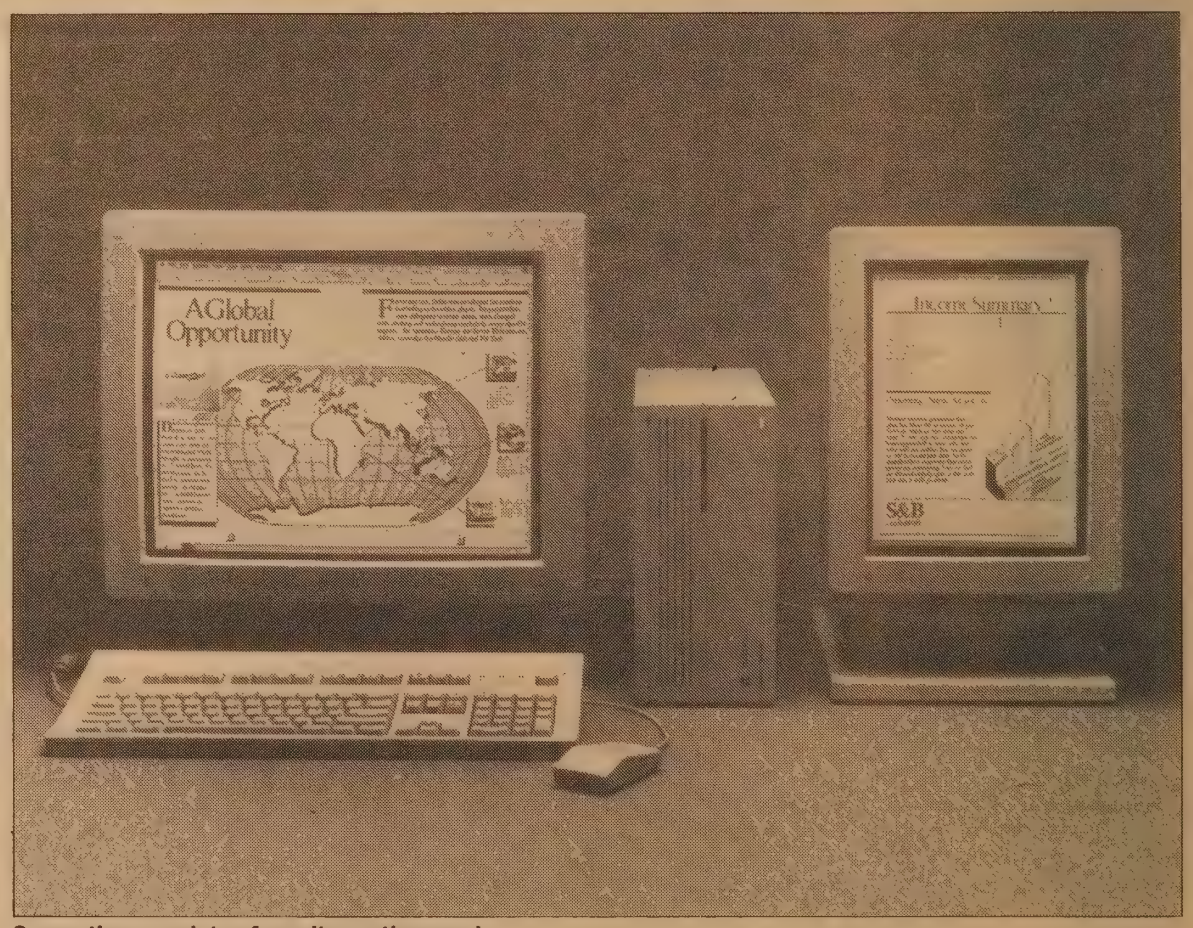
Or, This Place Would DIE Without It...

By Mary Eisenhart

The Macintosh IIcx was announced on March 7, 1989. Jean-Louis Gassée delivered a memorable demonstration of its simple and modular design, putting his credibility on the line by assembling a cx onstage. Fortunately for the simulcast, it worked fine.

Our IIcx arrived the next day, so new that the tech support people in Apple's editorial loan department warned us that there might be a bug or two they hadn't zapped yet. We promised to call them if any problems developed.

Eight months later, we've pretty much given up waiting for those bugs to emerge, and in an all-Mac office the IIcx gets constant, heavy use. Every story you read in these pages has passed through *Word* and *PageMaker* on that machine. Quite a few of the ads originate on the IIcx in *Multi-Ad Creator*. People who formerly ran their *Excel* spreadsheets on SEs now feel deprived if the cx isn't available. People with documents to send to the LaserWriter ignore the Plus/Plus combinations and wait in line to use the IIcx (the speed difference has to be seen to be appreciated).



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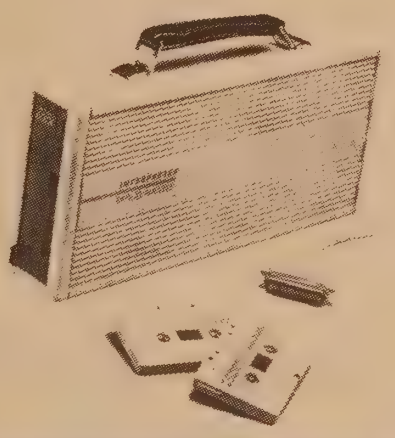

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In eight months, the IIcx has not failed once, in any way. (The renowned Curse of the Quantum 80 Meg Disk caught up with the SE/30, but it seems to have passed the IIcx by.) Most of its working life has been spent connected to Apple's Two-Page Monochrome Monitor, about which more later, and a LaserWriter II NTX (the dream configuration, if you can afford it); it also spent some time using an Apple 12" monochrome monitor and an NT.

Plug And Play

Unlike its smaller brother, the SE/30, which also features the Motorola 68030 chip and runs like a bat out of hell, the IIcx is part of Apple's "modular" Mac line. This, essentially, means that it's all components you can mix and match. Like the SE/30, it includes the SuperDrive, which can read and write to DOS and Apple II disks as well as Mac, and comes in one-meg RAM/floppy-only, 1 Mb/40 Mb hard disk, and 4 Mb/80 Mb hard disk configurations. It supports the use of A/UX.

Unlike its bigger siblings, the Mac II and IIx, the IIcx comes in a small box that includes three rather than six NuBus expansion slots. It also takes up a lot less desk space, particularly when stood on its side.

The system we're using consists of the IIcx with an 80 Mb hard disk and four megabytes of RAM, as well as the Two-Page Monochrome Monitor. And while it was a little unnerving to have multiple boxes of gear show up, we soon discovered that Gassée's little exercise in flamboyance assembling a system onstage made a valid point—assembled quickly by Lee Ann Nelson (B.A. Journalism) and Mary Eisenhart (B.A. English) following the lucid directions in the manual, the cx performed perfectly the first time. Ease of setup and configuration is one of the Mac's great promises, and the IIcx keeps it beautifully.

Performance

In a wide variety of applications, the machine has performed beautifully, from *PageMaker* designs to colossal *Excel* spreadsheets. As Mac II owners ourselves, both Lee Ann and I noticed improved speed over our home systems. (And yes, the IIci is even faster, by about the same margin as that between the SE and the SE/30. A IIci sojourned here briefly before it developed a disk problem and went back to Apple. Then there was this earthquake... We'll get back to you on that one.)

We have found no hardware or software compatibility problems with this system. Everything works the way it's supposed to, and the machine is so quickly responsive that it's fun to be productive.

The Apple Two-Page Monochrome Monitor

We've worked with displays from the great to the execrable, and Apple really did it right with this one. No glare. No distortion at the corners—the closest thing to flatness we've seen yet. Razor-sharp image. If you need a large monochrome monitor for your Mac, be sure you look at this one before you buy anything else. You'll probably fall in love with it. More importantly, you'll still be in love with it months later.

In its native state with its standard video card, the monitor supports four shades of gray; expansion modules are available to increase this to 16 shades.

The monitor comes with a tilt-and-swivel stand, which makes it surprisingly easy to adjust its considerable bulk to a position that's comfortable for you.

Ease of setup and configuration is one of the Mac's great promises, and the IIcx keeps it beautifully.

So Should You Buy One?

Mac shopping is getting a lot more complicated than it used to be—the venerable Plus is still hanging in there, the 68000-based SE is extremely popular, the 68020-based Mac II is available at ever-lower prices as the 68030-based SE/30, IIx, IIcx and IIci account for ever-larger shares of the market.

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What doesn't change particularly is that your choice should be governed by the applications you want to use on your machine. If your foreseeable needs don't go beyond relatively small and manageable programs like, say, Microsoft *Works*, or *MacWrite*, or if you need a lot of Macs on a network where the server's doing a lot of the work, the Plus and SE are relatively inexpensive and perfectly valid options. While it is certainly entertaining to watch the speed at which 68030s perform their appointed tasks, if you don't *need* that speed you can probably find more pressing uses for your computer dollar.

However, the writing's on the wall. With the advent of each new CPU and each new version of the System, applications are getting bigger and more demanding of the machine's resources, both speed and RAM. Furthermore, the high-end applications in particular (e.g. *PageMaker* and *Excel*) seem to get hungrier at at least the same rate that CPUs get more powerful. If you're planning to use behemoth applications, this is not the time to buy a Plus and hope you're going to get anything done.

In the 68030 family, you now have four options: the IIx, as large as a Mac II; the IIcx and the IIci, both of which use the smaller form factor and have fewer slots; and the SE/30, which has one slot and is the size of the original toaster-Mac (and the most closed-boxy of the 030 series).

If you need all the speed you can get and price is no object (relatively speaking), you're probably best off getting the 25 MHz IIci (the IIcx is rated at 16 MHz). It's fast and it's expensive ($8,669 list for the 4/80 configuration, as contrasted to $7,069 for the equivalent IIcx); it's also attractive to video professionals because it includes most of the Apple video functionality on the motherboard and therefore has another slot available. (It's also had some early reports of software incompatibility with its ROMs, so find out how it handles your application before you buy; there are disadvantages to being a pioneer, even with the slickest and fastest of machines.)

On the other hand, if schlepping the machine from place to place is one of your requirements, get the SE/30. While it's a lot heavier than the old Plus, especially with a hard disk in it, it's compact and easy to move around. Which is more than we can say for multi-part systems. (One relative weakness of the SE/30 is that your flexibility in choosing a monitor is somewhat limited. Whereas the modular units let you use several Apple and untold numbers of third-party display options, using an external monitor on the SE/30 requires taking its only slot, and the range of available video cards is small compared to the number available for the II line.)

And if you anticipate needing every slot you can get for video boards, accelerator cards, Ethernet connections, etc., both the older II and the IIx are probably your best choices because they've got six rather than three slots.

Without those specialized considerations, however, the IIcx is a machine that we can recommend without reservation as a powerful desktop machine for most applications. Its performance is wonderful; its three-slot capacity is enough for nearly everybody at this point; its future, given Apple's strong commitment to the 68030 CPU, is bright. For most people who don't have to carry their Macs around with them, this is the one to get. ■

With the advent of each new CPU and each new version of the System, applications are getting bigger and more demanding of the machine's resources, both speed and RAM.

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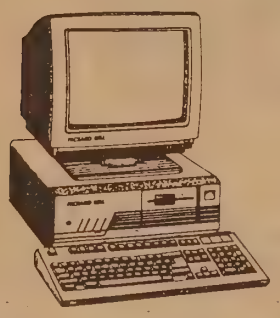

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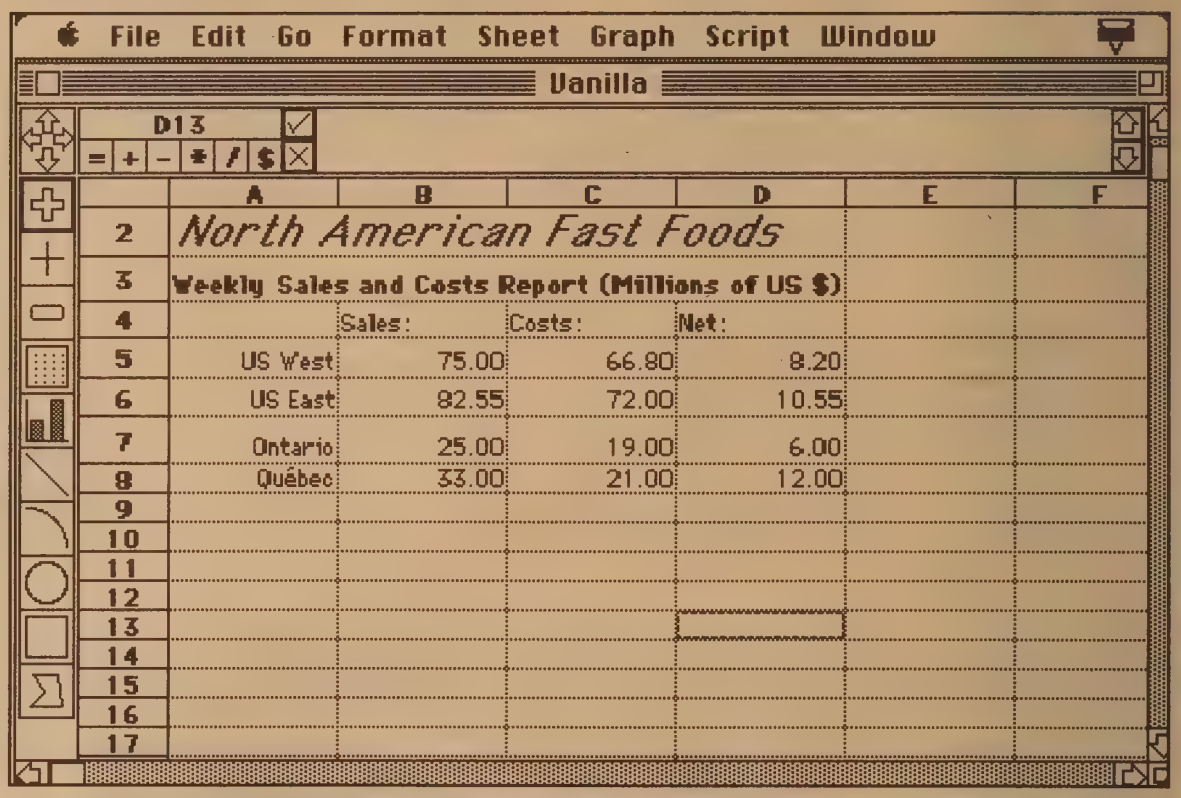
Wingz Flies

Beyond The Hype, Informix's Spreadsheet Turns Out To Be A Rich Graphic And Programming Environment

By Birrell Walsh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Basic Spreadsheet: This is the plain vanilla spreadsheet with none of Wingz's enhancements.

When *Wingz* was introduced, I found the massive hype that went with it repulsive. I wanted a spreadsheet rather than a spacesuit. But now I have worked with *Wingz*, both version 1 and the update version 1.1, and I find it a very flexible environment. It flies.

Wingz has been positioned as a spreadsheet with great graphics. It is that, but it is remarkable for being the first spreadsheet to have a Real Programming Language. *Wingz* is a development environment that should make the *Excel* team wake up trembling at night. The bad news is that in order to use all the features of *Wingz*, you *must* use the programming language.

The Basic Spreadsheet

I set up a very simple set of spreadsheets for a fictional North American Fast Foods company to try out *Wingz*.

Wingz is a very adequate plain spreadsheet, even without all the toppings which come with it. Included are full formatting for text and numbers, the customary typefaces, and control over the inclusion or omission of gridlines and headings. You can enter functions almost without touching the keyboard, because the standard numerical operators "+", "-", "*", and "/" are available on the entry bar. You can click on them to enter the operator, just as you can select ranges of cells by mouse. As in *Excel*, you can paste in functions by choosing them from a list box. (By the way, *Wingz* 1.0 did not export to *Excel*. Since most Mac offices already have *Excel*, this was a Very Grave Omission. Version 1.1 has corrected it: the program now exports as well as imports in the SYLK format.)

Most of *Wingz* operates from extremely detailed menus. When you want to perform any operation, you begin by pulling down a menu, which may lead you to a secondary menu. For those who enjoy menu browsing, it means that most of the power of the product is available directly, but it can get tiresome seeking the same function again and again from a menu that vanishes after you click it. (May I recommend that future updates of *Wingz* consider the tear-off menus that Apple used in *HyperCard*? Of course, you can automate common functions by writing a HyperScript, and attaching it to a button.)

There are 18 business functions, 10 database functions, 23 date and time functions, 34 numerical functions, nine logical functions, 10 statistical functions, 25 text functions, plus the HyperScript language. *Wingz* supports matrix mathematics, simultaneous linear equations, and regression analyses.

It also lets you find all cells which depend on a

Wingz is a development environment that should make the Excel team wake up trembling at night. The bad news is that in order to use all the features of Wingz, you MUST use the programming language.

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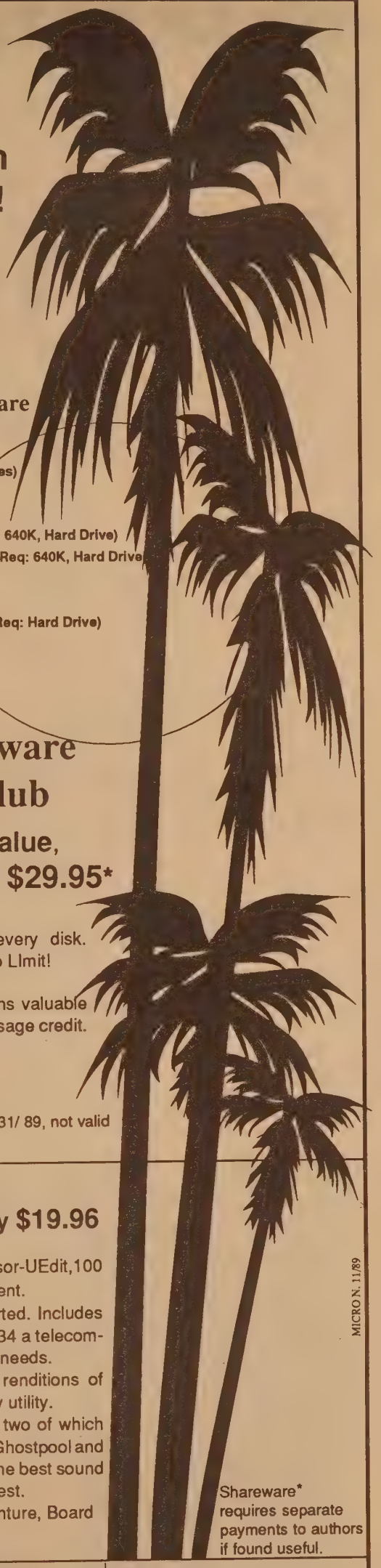

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given cell, and all cells from which it draws values. With these features, you can audit worksheets and check the underlying assumptions.

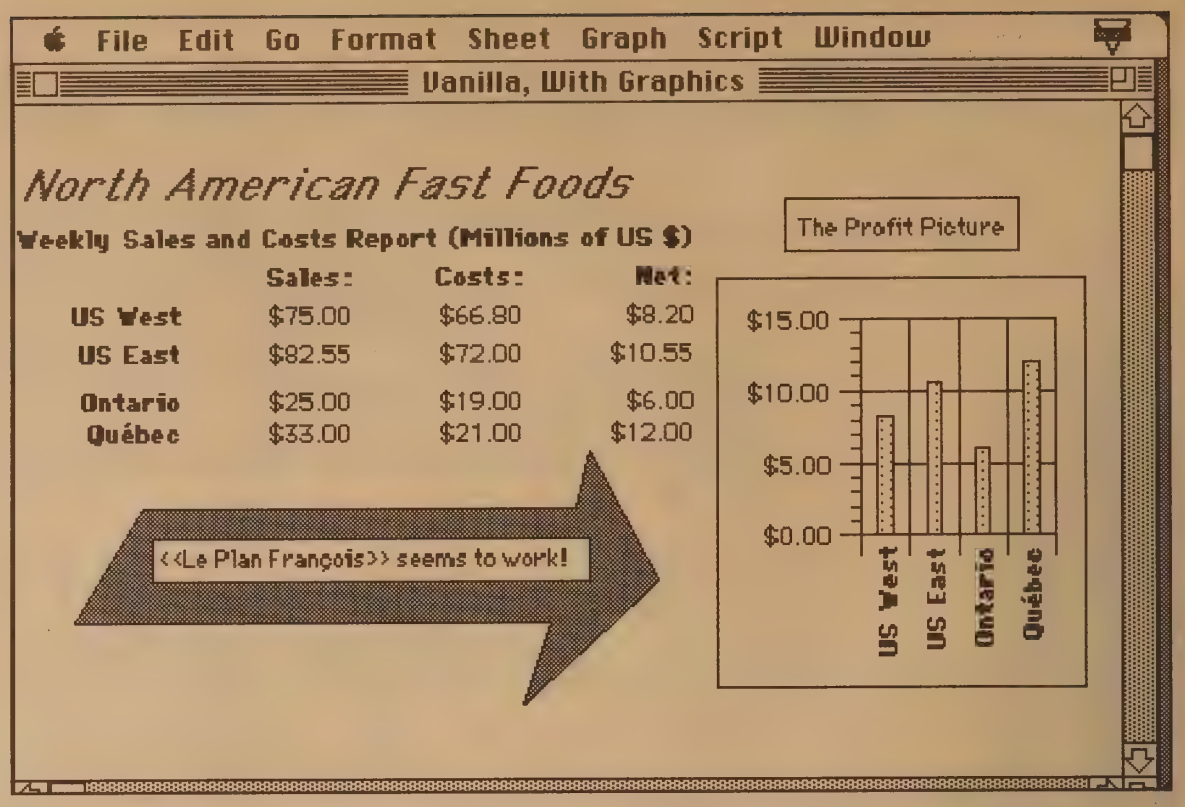
Jerry Neuman of San Francisco's KQED-FM finds it odd that you cannot pre-format an entire column so that anything you type into it is in a given typeface or numerical format. Indeed you can't, although you can pre-format an empty range. An unfortunate omission. (You *can* format whole ranges automatically if you develop a HyperScript to do so.) He also notes that it is difficult to get values from another spreadsheet (if, for instance, you are consolidating), because the externally-referenced spreadsheet must be opened when it is referenced. This is awkward, although one can design a HyperScript command to handle it with a button click.

The Spreadsheet With Graphics And Charts

Down the left side of the *Wingz* sheet you see a set of icons. These are the "toolbox." They are devices which let you add graphics, text, charts and buttons to the simple spreadsheet you have built.

Text may be added in "text fields" which can be moved, bordered, rewritten, hidden, reformatted—you name it. You can create a fair text-based application inside of *Wingz* with just the simple word-processing tools available in the text fields. You can lock fields so only the originator of the spreadsheet can change the text, or you can leave them unlocked and invite others to add comments or information.

There are tools for drawing lines, arcs, ellipses, boxes, and irregular polygons of various shapes. Any of these can be filled, opaque or transparent, and can seem to float off the spreadsheet if you choose. You can draw these figures in real time with HyperScript. You can also import finished graphics into *Wingz*, in PICT format or from the clipboard. I brought in a map from MicroMaps's *HyperAtlas*—originally in bitmapped format—through the Clipboard.



Basic, with Graphics: Wingz has a full set of graphic and charting tools. The charts are hot-linked to the numbers they depend on.

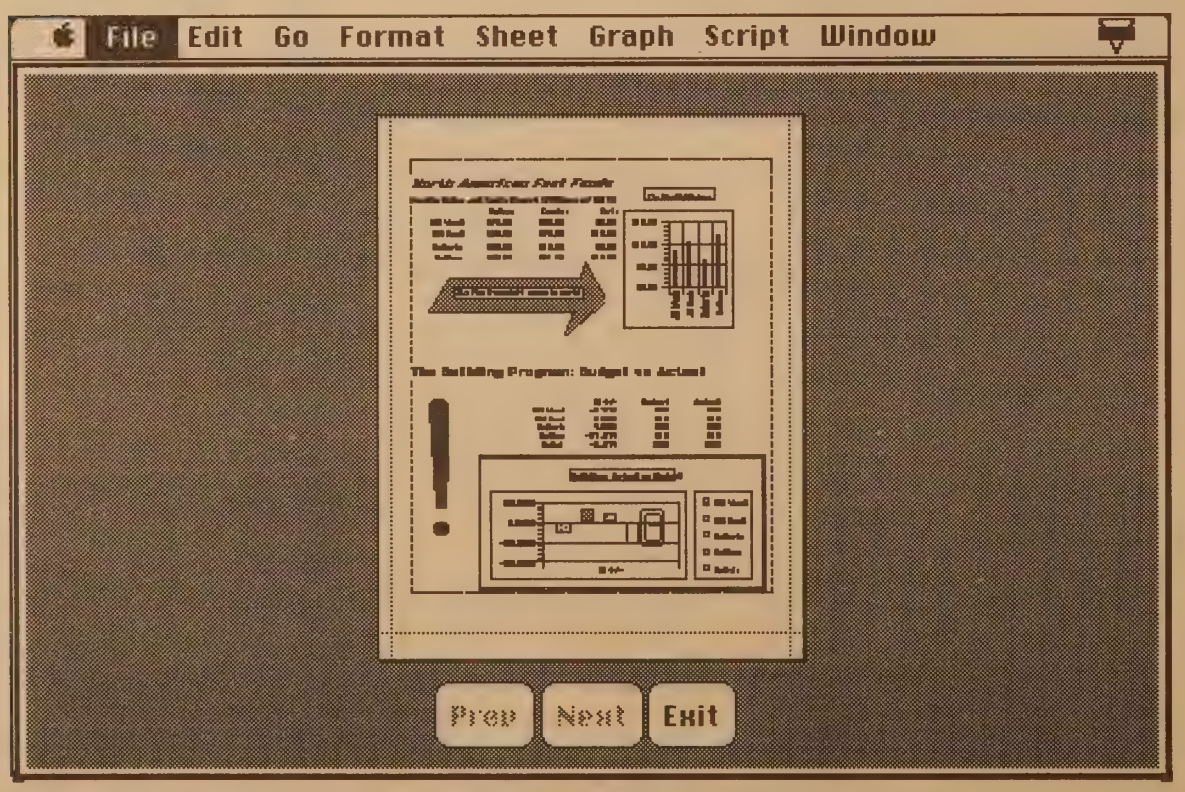
Wingz has built in an excellent set of charts which are "hot-linked" to their data. If you change the numbers, the chart will immediately be redrawn to reflect the new figures. Because charts can appear on the same page as the figures, *Wingz* can be used as a real-time financial presentation tool. You can hook up your Mac to a projector and show everybody exactly what will happen if you change certain inputs. It is a financial modeler's paradise.

What kind of charts? Ah, let me count the ways... *Wingz* will draw bar charts, pie charts, exploded pie charts, line graphs, step graphs, scatter charts, polar graphs. There are 3-D bar charts and pie charts, and wire-frame models. All are available with simple menu choices. You can also customize any of them. You can choose legends, titles, footnotes, scales, grids. For the 3-D charts, you can choose the angle and distance from which you view the chart.

Because charts can appear on the same page as the figures, Wingz can be used as a real-time financial presentation tool. You can hook up your Mac to a projector and show everybody exactly what will happen if you change certain inputs. It is a financial modeler's paradise.

If you have the equipment, every effect in *Wingz* can be done in dazzling color. If not, you work with the Mac's complete palette of fill patterns.

I decorated the North American Fast Foods spreadsheet in a few minutes. The graphs illustrated the financial results, and the arrows and text fields allowed me to illuminate and underline the important points.



Report Preview: Wingz lets the user see what the printed page is going to look like.

The Spreadsheet, With Graphics, To A Report

Wingz does not have a report generator per se. You must set up the report, choose the summaries and lay out the results on the spreadsheet yourself. It *is* capable of making a very attractive printed version of what you have created on the screen.

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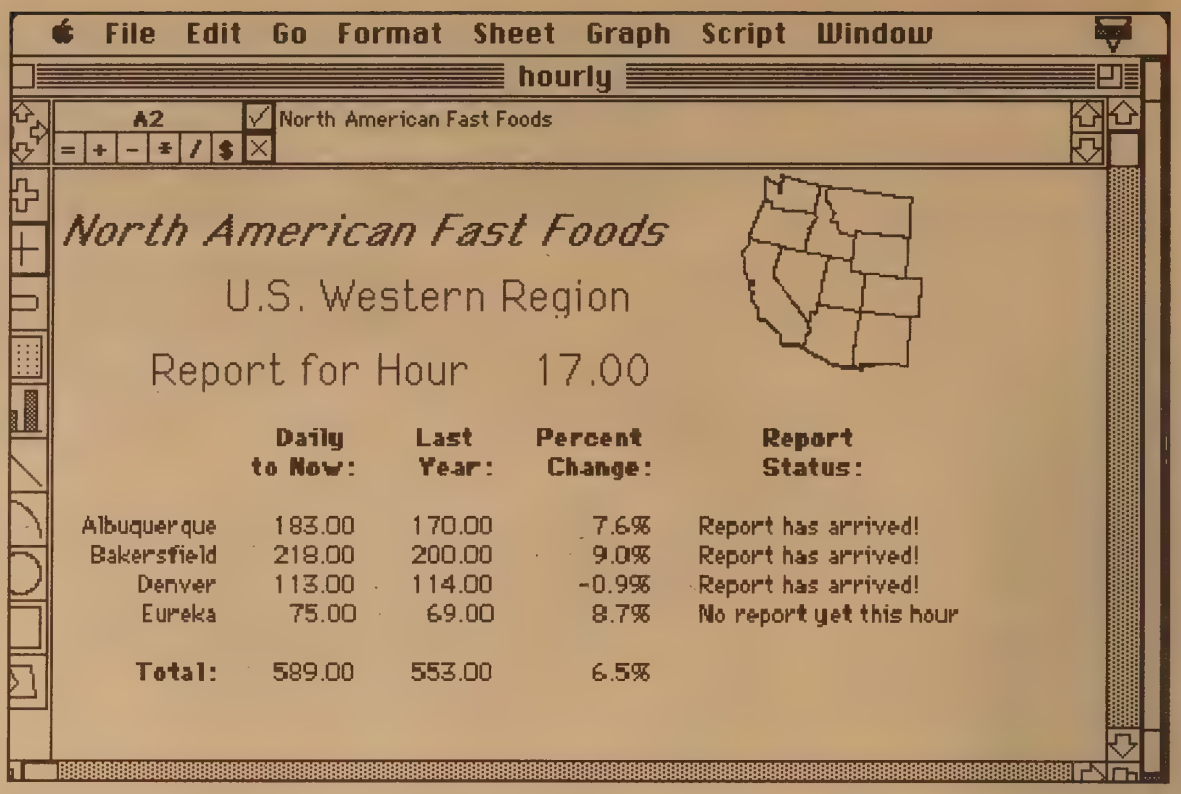
page. You can choose dots-per-inch resolution for the printer. You can design headers and footers. You can insert custom page breaks, or choose to print only certain sections of the spreadsheet. You can print graphics and text fields, or not, as you see fit. You can make a stuffy version of the report for those who prefer columns of numbers, and a graphic version for those who like more pizazz. There is an extremely useful page setup and preview facility for reports. It lets you see how your layout will look before you print, an amazing time- and patience-saver.

The Spreadsheet With An Automated Updating Script

What makes *Wingz* most useful is the programming language, HyperScript. It has been compared with the Hypertalk programming language for *HyperCard*, but the resemblance is minimal. (Is anyone but me tired of the prefix "Hyper-"?) HyperScript is less easy to use, and more powerful, than HyperTalk. It lets you design fully programmed systems which use the spreadsheet to store information. You also use the easily formatted spreadsheet to display results to the user.

Anything you can do with menus in the spreadsheet can be done as well with a HyperScript command, so you can design the look you want and then automate it with a script. In fact, you can record your actions as you perform them, using the "learn" mode. If you use it this way, HyperScript is simply a macro language.


File Edit Go Format Sheet Graph Script Window
hourly
A2
North American Fast Foods
North American Fast Foods
U.S. Western Region
Report for Hour 17.00
Daily to Now:
Last Year:
Percent Change:
Report Status:
Albuquerque 183.00 170.00 7.6% Report has arrived!
Bakersfield 218.00 200.00 9.0% Report has arrived!
Denver 113.00 114.00 -0.9% Report has arrived!
Eureka 75.00 69.00 8.7% No report yet this hour
Total: 589.00 553.00 6.5%

The Automated Hourly Report: Wingz Programming language in action. A "script" keeps this report current by continuously checking for incoming reports, and then updating this summary.

But it goes much further. HyperScript has control structures like "If" and "Case." It has looping, with "For" and "While." It has rudimentary file functions to recognize the presence and absence of files. It has a editor in its own window, so that you can work on your scripts while the spreadsheet is also on the screen.

HyperScript scripts can be attached to buttons. They can also be set to trigger on events—opening, closing, or recalculation of a spreadsheet, for instance. You can make scripts run "on idle," so that they happen only when nothing else is going on.

For North American Fast Foods, I designed an hourly report system. In this spreadsheet the script is constantly searching a directory to see if the hourly reports have come in. If they have not, it says

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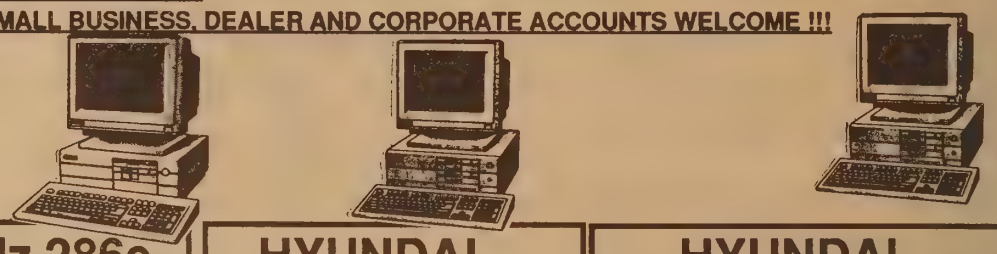

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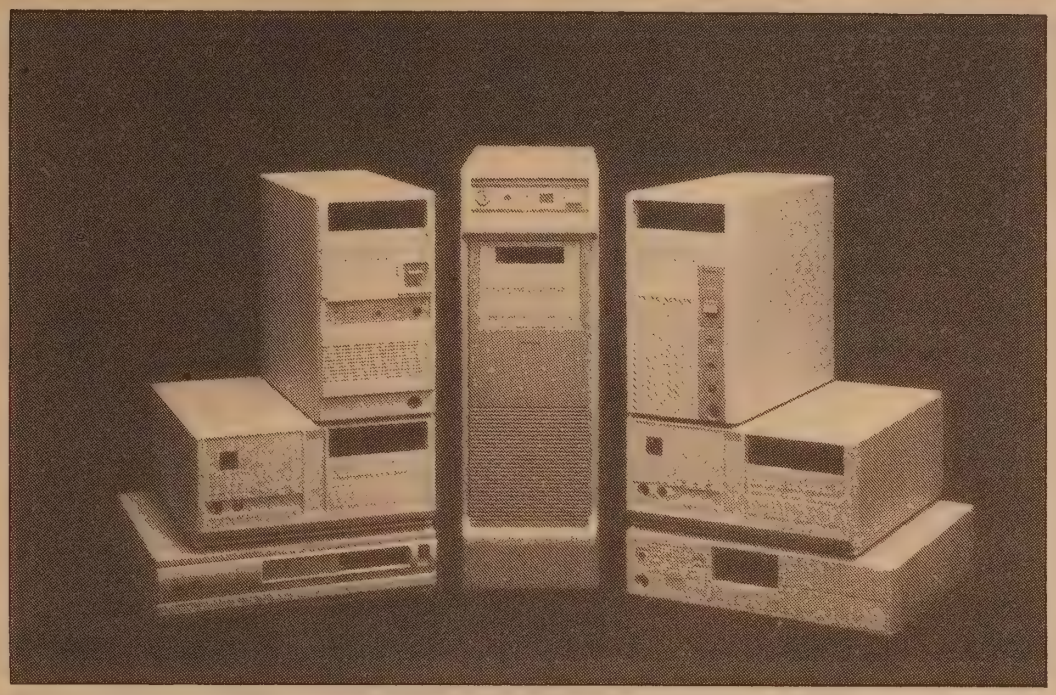

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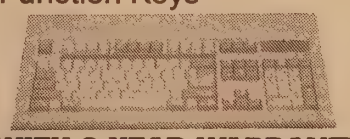

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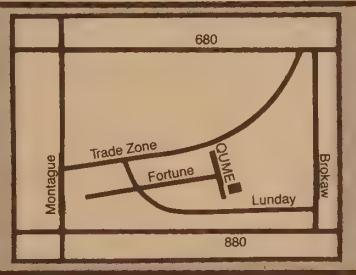

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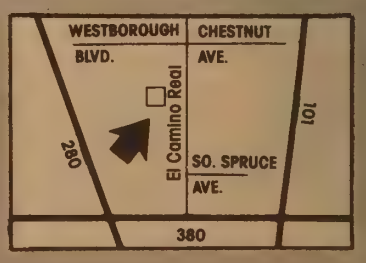

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so. If they have, it automatically opens each incoming hourly report and imports the data to the summary spreadsheet. It also informs the user that the update has happened. This kind of program is not unusual in C or Pascal, but it is a significant step forward for a spreadsheet.

HyperScript is going to present new opportunities for developers. All elements of *Wingz* are available through HyperScript. There can be automatic charts and drawing, sound, simple animations, and spreadsheets that rewrite their own formulas. The in-house programmer and the independent will be able to offer *Wingz*-based systems which go far beyond the templates which are currently possible with *Excel*, and Informix plans a catalogue of third-party products. That is why I say there may be sleepless nights in Redmond, Washington, where *Excel* is produced.

And there's more. HyperScript provides support for external functions and commands which you write in C or Pascal. If you want to extend *Wingz*, full instructions are provided.

In your *Wingz* 1.1 package there is a 523-page HyperScript manual, with examples, which makes HyperScript much more accessible than did the laconic information in version 1's references.

Disappointments

I experienced several unpleasant moments in preparing this review. I had a 200 x 200 cell worksheet working under MultiFinder. I pasted the same formula into each cell, and *Wingz* told me that there was not enough memory to do the job. It pasted an un-recalculated answer into all the available cells. Hmm—maybe I could get it to recalc those cells it had succeeded in pasting. I tried it. "Not enough memory." Well, could I save the worksheet to clean up the mess later? "Not enough memory." I had to delete the pasted functions before *Wingz* would let me go on. Fortunately I could.

HyperScript is not the most graceful language in the world, and I lost patience more than once with *Wingz*'s slow debugging cycle: open script window - change script - compile - test - oops! - start again. Many excellent functions are included, but they often have unusual names. It takes a while to find a function that does what you need. The documentation in version 1.1 is much better than that in version 1. It still needs work. We need a better index, and we need more examples of command usage.

Halfway through my work one day, the Mac told me, "The application *Wingz* has unexpectedly quit." I still don't know what caused it. This happened only once in hours of working, but it was troubling.

Is Wingz For You?

If you are a developer who builds financial systems for others, look at *Wingz* very seriously. It has tools to make tools, the definition of "capital goods" if I remember my economics right.

If you are doing scientific research, you will like *Wingz*. You can do your research design in it, store your results in it, process them in it, and then present your findings in it—numbers, text, charts and graphics.

If you need superb graphics you will find them in *Wingz*. It is an excellent hybrid of spreadsheet and presentation product. You will be able to make your presentations onscreen and on paper.

If (on the other hand) you have taken a vow *never* to program, and you have not even made a short *Excel* macro, you might hesitate a moment. Much of the power of *Wingz* is available through menus, but it will open whole new worlds only to people who will learn and use HyperScript. ■

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The in-house programmer and the independent will be able to offer Wingz-based systems which go far beyond the templates which are currently possible with Excel, and Informix plans a catalogue of third-party products.

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(Upgrade from v. 1 is free to registered owners; the new documentation unfortunately costs $37)

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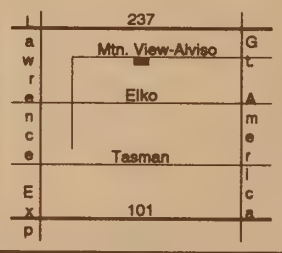

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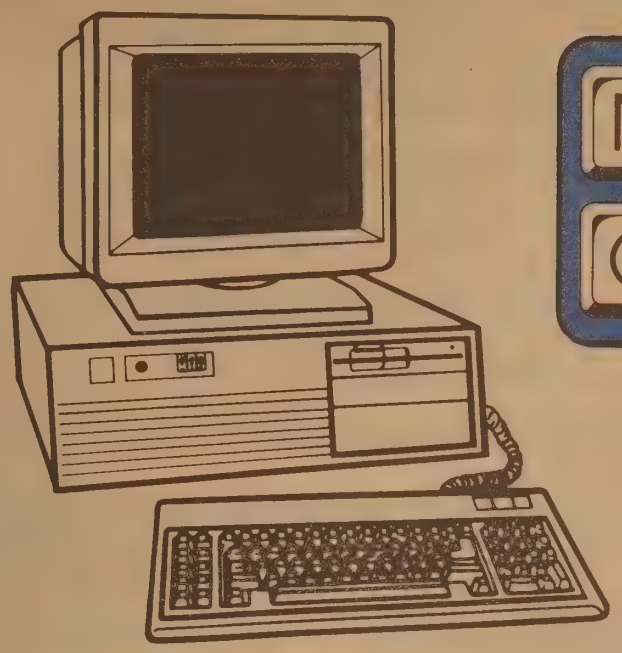

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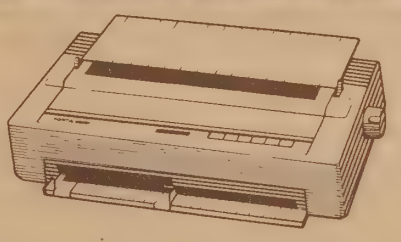

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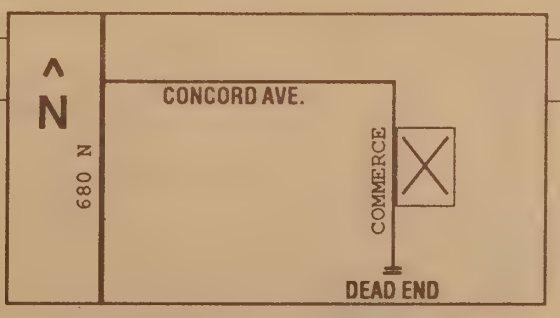

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BY DAVID MORGENSTERN

What's Shakin'?

It takes more than just the second greatest Bay Area earthquake of the century to send terror into the hearts of the BMUG office staff —it takes the earthquake happening while we're in the process of restoring our membership database! Fortunately there was no harm done. The original 7.0 quake release was recalled—the latest version is 7.1 Richter.

Word Of Mouth Power

The crowd that sits in the shadowed recess of the Physical Sciences Lecture Hall Thursday nights is the BMUG meeting peanut gallery. Vendors' blood runs cold at the sight of a raised hand from that group, with some thinly veiled criticism of the rep's program's lack of support of international texts and keyboards. It might be an oral bug report, or even worse, a listing of incompatibilities with unreleased and unannounced products, or system software. Software representatives are not alone in their fear of the verbal abilities of this code-blooded congregation.

After a recent meeting, this crew sped down the hill to a late-night Chinese restaurant for a snack—their shredding of two or three presenters was not sufficient. They packed into a place across from the BMUG office.

As the pack chowed down, yelling and trading the latest Mac secrets, two robbers walked into the restaurant, thinking the place an empty easy mark. The roar of the BMUG crowd completely unnerved the bums, and they fled into the darkness.

By The Beautiful Seybold

The Seybold Computer Publishing Conference & Exposition was held in San Francisco's Moscone Center in September. It ain't just desktop publishing anymore—as a glance at some of the hardware and software price-tags would tell you. Ouch!

The relentless march of technology was especially evident in color hardware and software this year. There were many booths showing color scanners, color retouching and separating for the Mac and other operating systems. Are *ill*-ustrations the color of money green?

NeXT made a big splash at the Expo. The scientific and business applications St. Steve has promised haven't made their way down the pipeline yet, but there was plenty of great publishing and graphic software to play with. Next year, NeXT will have more hardware and software configurations than Barbie has clothes, to try and woo customers away from the competition.

They gave everybody a taste, by filling one side of the hall with fifty black NeXT machines. NeXTophilia—the overwhelming compulsion to fondle powerful, shiny black computers.

Here are some of the sights we saw when we crawled out from behind our booth at the show:

• The font war between Adobe's PostScript and Apple's Royal outline-font technology was stuck to the back of everyone's teeth like peanut butter. All the industry "giants" gathered at the conference yelled, hissed, and whined at each other about the mess. The high point of stupidity came with an audience show-of-hands vote between the Adobe Type Manager (ATM) and Royal software. This was a pretty brave ballot, since ATM was fighting its way upstream through beta testing, and most of Royal is under nondisclosure. ATM won the contest, but Apple claimed that most of the crowd thought they were voting for Automated Teller Machines.

Now that the "Year of the CPU" is drawing to an end, we can contemplate more important things. Like what next year will be called—The Year of System Hell?

• BMUG's Publishing Director, Randy Simon, had to be dragged away from the Frame Technology booth for hyperdrooling. *FrameMaker 2.0* for the NeXT machine was too much, incorporating text processing, drawing, layout, and long document, or "book-building," capabilities in one package. You'd hope that a program with an introductory price of $1,000 would slice bread too. Randy may have to wait for the Mac version due next year—unless some kind-hearted black box maker might "loan" us one. Hint-hint.

• Top-of-the-line capabilities are starting to be made available at a reasonable (to some of the rest of us) price. The RasterOps 264 board is a good example of this trend. It offers 24-bit color (displaying 30,000 out of 16.8 million colors at once) for a list price of $995.

It was also evident that 400 dpi PostScript printers were pushing down the prices of the many flavors of 300 dpi printers. Non-PostScript printers are finally offering adequate performance for the buck, with Royal dreams making them look even better. Users have lots of choices now, with QuickDraw laser printers, LaserJet models, or printer drivers and adapters for Fujitsu, Kyocera, or Toshiba printers.

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HOT TIP

Check your system software version. There are still folks using the "pure" 6.0 release—it's bad medicine. If you are behind the update times, you should upgrade to 6.02–6.04 versions immediately.

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• Macreations released their powerful table generator, *Tycho*. It has features galore for professional table creation. It is also the first application to incorporate GhostFont technology.

This spooky-sounding code helps users move documents between different Macs. Everyone's system setup is different, some with lots of laser fonts installed, while others prefer strange-looking display typefaces. GhostFont technology allows users to work on files that use fonts not installed in their system.

GhostFont looks at the document and puts the names of any non-installed font at the bottom of the font menu with an asterisk. The text on the screen looks like the application's default font, but it knows its real name. This helps users not have a formatting nightmare when they get home.

Thom Hogan, Macreations' president and columnist for other rags, said that once they had talked the idea through, it took only four hours to program. "From day one, Apple hasn't understood fonts for diddly-squat." He said that the next version of *Tycho* will allow users to define installed substitution fonts for the missing ones.

Thom has been like a sphinx while this program was in development. I tried every Machiavellian subterfuge to get him to spill the beans, and got nothing. He kept his wits and nose about him, unlike his program's namesake, the sixteenth-century Dutch astronomer, Tycho Brahe, who had a silver nose. Lost while dueling, not snorting!

• "It's No Contest" crowed the ads for *Publish It!*, by TimeWorks. They showed two versions of an annual report, one by *PageMaker*, "the Industry Standard," and the other produced with *Publish It!*. Even though the challenger's product comes with a dictionary, its layout copy was totally misspelled. "These transformers are used in television, carsful isn' and typeers writers, incolancla other words..." That's not their only problem. Did the TimeWorks folks say the name of their product five times in a row quickly?

• BMUG press members attended Altsys Corporation's presentation of its new design utility, *Metamorphosis*. The program fools around with PostScript fonts, including those in your laser printer, and Adobe's special *Type 1* fonts. It allows the font outlines to be edited by illustration and typography software.

As the product development team was introduced, our heads turned to a familiar figure, presented as a genius programmer—BMUG's Phantom of the Operating System, Harvey! He had cracked the secret Adobe *Type 1* coding long ago, as others would do a crossword puzzle.

Fourth Time's A Charm?

The latest arrivals in this Year of the CPU (Central Processing Unit) have brought their kissing cousin, the System Software Update. System 6.04 is required for Macintosh Portable and IIci users. Apple and BMUG agree (a phenomenal occurrence) that users with 6.02 and 6.03 software already installed don't require an upgrade, and will coexist on a network. There are some 6.04 Update things to keep in mind:

• The Installer program has been entirely rewritten. This is good news, since the old ugly Installer was on the BMUG interface hit list for years. The new version is better, but a long way from perfection.

The program is a lot more intelligent. It understands which flavor Mac is running and what resources it must add. You won't have to wait for Installer to figure sizes—it will only warn you when there's not enough space to fit the update. Some other improvements include sort-of one-button installation, small help fields, and a reduced number of disk swaps to complete an installation. It's also aware of viruses—you want to get installed? Pass the virus test first, kids.

The Installer is still a very ugly program. Apple seems to want a pat on the back for fixing the program. It's taken them five years to bring a vital piece of software up to a barely satisfactory level. The Human Interface Design group at Apple has been fooling around with a version modeled after a mail-order catalog. When are we going to see something fun?

The BMUG Technical Department is also concerned with the stability of the new Installer. It seems to have a problem if all resources, or files, it wants to see in its disk set are not present. The Installer has had past problems working with customized System software. You want me to install Yin and Yang spinning cursors? No way!

• A change in System 6.04 is the action of the **Option** key when opening windows and folders in the Finder. In previous versions this would not cause any immediate action, but when returning to the Finder after launching an application, the windows would be put away. Now the parent window is closed when you **Option + Open** a folder. This is nice for MultiFinder users that have to get back to the desktop.

• Recently constructed Macs have had the ability to rebuild the Parameter RAM (PRAM) by holding down the **Command**, **Option**, and **Shift** keys, while opening the **Control Panel** (it's under the Apple menu) with the mouse (a nice feature). PRAM holds the settings of your Control Panel, Chooser, and other devices. Sometimes the settings become corrupted and cause all kinds of problems and confusion. Rebuilding PRAM settings is the constant litany heard by callers of the BMUG HelpLine.

The high point of stupidity at Seybold came with an audience show-of-hands vote between the Adobe Type Manager (ATM) and Royal software. This was a pretty brave ballot, since ATM was fighting its way upstream through beta testing, and most of Royal is under nondisclosure.

The fantastic 128 K original Mac and the Fat Mac

What Is BMUG?

BMUG is a non-profit educational corporation, promoting the exchange of information. Like any growing organization, it is many different things to its 7000+ international membership. BMUG, Inc. is a computer user group located in Berkeley, California. The group specializes in computers using a graphical interface. For a while that meant the Apple Macintosh, but now includes other makes, models and operating systems. BMUG supports many Special Interest Groups (SIGs), an eight-line Bulletin Board System (BBS), a free HelpLine, software library, weekly meetings, seminars, and much more. BMUG also puts out a semi-annual 400+ page book that we call our "newsletter."

Our motto continues to be: *We're in the business of giving away information.*

Come and join in the dialogue at the BMUG main meeting every Thursday evening, 6:00 to 9:00 (or whenever we finish), in the Physical Sciences Lecture Hall on the UC campus.

The BMUG HelpLine, (415) 849-HELP, and our fax number, (415) 849-9026, provide technical assistance and telephonic hand-holding during business hours (11:00 a.m. - 5:30 p.m.). If your question can't be answered on the spot, we try to get you in touch with someone that can help. Of course, not every problem can have a happy ending—but we try.

BMUG has one of the most up-to-date, comprehensive software libraries around, with 400+ double-sided disks filled with the latest versions of public domain or shareware programs and HyperCard stacks. New disks are unveiled almost every week at the Thursday general meeting. BMUG also brings you the *PD ROM™ 2.0*, our entire library and more on CD-ROM—according to Apple, it's the best selling CD-ROM!

Our BBS offers many of the latest versions of files in our software library as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet (161/444); by calling a local FIDOnet BBS in your area, you would then be able to get in touch with us wherever you are as well as send mail to users everywhere! BMUG is now a part of the international USENET network (apple!bmug!user.name@sun.com) or (user.name@BMUG.FIDONET.ORG). With our multi-line capability you are now able to have access to BMUG almost 24 hours a day. It's easy to use, fun, and a great resource.

To get some further information about BMUG please write to: BMUG, 1442A Walnut Street #62, Berkeley, CA 94709. If you prefer to phone our business office, call (415)549-BMUG, or FAX (415)849-9026.

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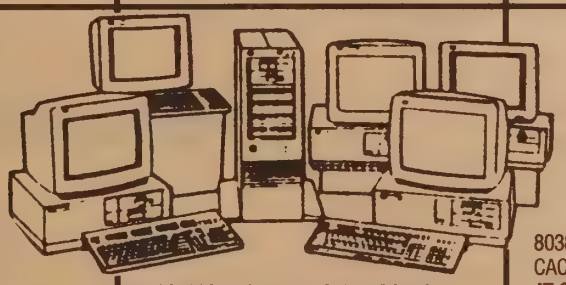

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(512 K) required their users to remove the battery for 15–20 minutes to zap the PRAM settings. The Mac Plus and some 512e computers have more PRAM (XPRAM—extra PRAM, get it?) than earlier models, but suffer the same battery heritage as their forebears.

Mac SE and Mac II models have a special non-removable lithium battery with a seven-year life (so Apple says). Their PRAM is rebuilt with the key combination described above. The new system software gives this convenience to Macintoshes with XPRAM—mostly Mac Pluses.

• If you are running *HyperCard 1.2.5*, you must use System 6.0.4. There is some question that earlier versions of *HyperCard* run under the new System may corrupt stacks, so don't mix and match. This release of *HyperCard* helps users of jumbo stacks—12 Mb or larger!

• Apple has been working on adding sounds to the Mac operating system, supposedly to help vision-impaired users (very serious and not for fun). Sounds are added to all sorts of desktop actions. This project is called the Sonic Finder, and soft-headed code divers tell us that System 6.04 has some of the abilities built-in. Apple's private telecommunications program, AppleLink, already has some of these sounds—windows woosh, and so on. All that's needed is a special top-secret file called Finder Sounds in your System Folder. Ear plugs are not included.

Now that the "Year of the CPU" is drawing to an end, we can contemplate more important things. Like what next year will be called—The Year of System Hell?

Disaster Drill

Everyone living in the San Francisco Bay Area has a story to tell about the Big One of 1989, and the tales seem to be getting better at each repetition. BMUG donated the use of several of our Macs, our considerable expertise, and finger punching, to help the Red Cross effort to relocate homeless victims of the Quake and to add up damage reports for the Feds.

The BMUG bulletin board was up and running soon after the earthquake. Members left messages to the Mac community on each other's survival and personal disaster. We were sorry to hear of the death of a BMUG friend, John J. Anderson, a senior editor at *MacUser* magazine, killed outside of MacroMind's offices in San Francisco.

Apple was especially hard hit, as were the employees dodging falling monitors and hard disks. The De Anza 3 building that housed much of Apple's system software, networking, and communications development was totally ripped apart. The projects there are being shifted to other facilities until a new home is constructed. There's also talk that this might delay release of System 7.0, but *timely release* and *system software* have never been associated with Apple, or anywhere else in the computer industry.

Here are a few things to consider before, during, and after a natural disaster:

• Back up your data. This should be mumbled under the breath of every computer user, substituting *my* for *your*. Important files should be backed up more than once—a working copy and two back ups. I've always found that backing up my work keeps my hard disk humming perfectly. If I fail to properly back things up, my drive puts on the brakes.

• Store backups in a secure place. It is convenient, but not necessarily wise, to keep your spare set of files sitting in a box next to your computer. Special data safes are quake- and fire-proof. High capacity optical media drives can make off-site storage more feasible.

• Check out low-cost uninterruptible power supplies (UPSes). There are half a dozen models in the $500 range. They will keep the power coming to your Mac and hard disk for about 15 minutes—time enough to save data and properly shut down machines.

• Pull the plug on your Mac if there's a power outage. After a natural disaster, unreliable electrical service can produce power spikes that can blow up sensitive appliances. It also helps relieve unnecessary demand on the power grid when the system is restored. Pulling the plug can let you keep sleeping when the juice starts flowing again at two in the morning. Beep!

• Reformat your hard disk after a heavy shake. If you drop the drive, or it takes a bouncy ride across the table during the quake, the head of the drive might have hit the surface of the magnetic media. Formatting software finds the bad places of a disk and makes sure it won't write any of your data there.

• Use your Mac to organize your household and business insurance data. I don't know if it's simple denial, or something more mysterious, but people don't want to deal with lightning striking their heads. You can use the database manager you've learned, or if that's too much, take a look at the Nolo Press life organizing software, *For the Record 1.03,* which keeps track of your possessions, and *WillMaker 3.0,* that tells what you want done with the junk you've tracked. Be sure to print out several copies of your belongings list—it won't do very much good to hand your insurance agent a floppy when the power is down.

Bytes and Pieces

Last month, I whined and begged for angels to help us with some hardware donations. That resulted in the BMUG Mainframe—sort of. Someone called up and asked us if we wanted a mainframe. A windfall, we thought. It took three of us to lug the device into a pickup and bring it back to the office. It turned out to be a heavy freezer-sized, circa-1965 Big Blue Cluster Controller—sort of an ancient hard disk.

If you want to feel good and do some good, BMUG has a great need for some 386 PCs, OS/2s, and any flavor of UNIX workstations. If you're upgrading your Mac and need a new home for your old 512 K, or Mac Plus, BMUG is in touch with many other needy non-profit groups, and we'll handle the technology transfer.

When Apple tries something new, the number-one Macintosh programming genius, Andy Hertzfeld, checks it out. His roving eagle eye always spots some problem that he can fix. When the Mac II hit the scene, he came up with an INIT that improved color handling, *QuickerGraf*. This code was eventually incorporated into System Software.

Andy found something that bothered him about the Mac Portable. The flickering cursor bugged him, so he will be releasing a CDEV to solve the problem. It will end up on the BMUG BBS, and on a Utility disk in the library.

This holiday season, think of BMUG when your thoughts turn to Macintosh gift giving! A gift BMUG membership is the perfect combination of good thoughts and good thinking. Our disks and publications will push a smile to a grin. A fantastic BMUG T-Shirt will show great taste—when you're at the mall returning that other stuff.

HOT TIP

Pull the plug on your Mac if there's a power outage. After a natural disaster, unreliable electrical service can produce power spikes that can blow up sensitive appliances. It also helps relieve unnecessary demand on the power grid when the system is restored.

Shareware Spotlight

Writing about the Seybold Conference put me in an output kind of mind. It was great to see all the fancy illustrations and printing devices. More and more clip art is being offered in EPS (Encapsulated PostScript) format these days. If you have a great illustration, but your layout program or printer doesn't support EPS, try the *EPS->PICT* desk accessory by the Altsys Corporation. It turns EPS files into standard Macintosh PICT format, that can be copied to the Clipboard, and used in almost all Mac programs. This freeware program and more is on BMUG *Graphic 8* disk.

BMUG Pictures 23, 36, 37, 38 and 39 have lots of great EPS illustrations. Each disk is $4. ■

Upcoming Events

December 7 Paracomp *Swivel 3-D.*
December 14 Informix *Wingz,* Bob LeVitus from *MacUser* Magazine.
December 21 No Meeting—Check out the BMUG BBS.
December 28 No Meeting—Check out the BMUG Forum on Connect.
January 4 To Be Announced.
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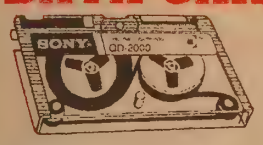

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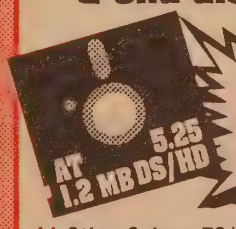

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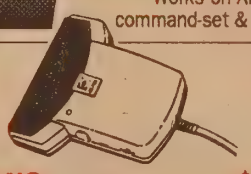

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Top Ten Computer Games Of 1989

By Mike Markowitz

Picking a "top ten" list of anything is a sure formula for making enemies.

It will be even worse with a subject like computer games, which tends to arouse passionate, usually destructive emotions in players. So let me explain....

Over a hundred computer game titles were published during the past year, but few could be called monster hits. The Nintendo phenomenon seems to have bitten deeply into the market for disk-based arcade-action games aimed at younger players. The major trends were the growth in demand for titles that run on IBM PCs and compatibles, and the improving quality of the products, as more PC owners acquire EGA or VGA color graphics. At the same time, there has been a sharp decline in the output of titles for the classic 8-bit machines (Commodore 64, Apple II, early Atari, etc.) My main game-playing system is an Apple IIGS, and I also evaluate a lot of games on PC compatibles and Macs. The best "game machines" are still the Amiga and Atari ST, according to the experts, but only a lucky few players actually own one of these doomed systems. Some

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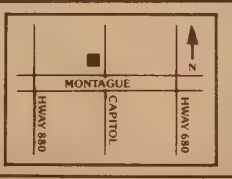

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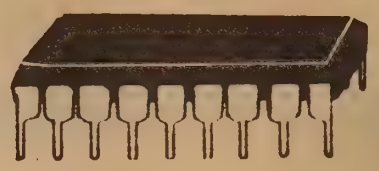

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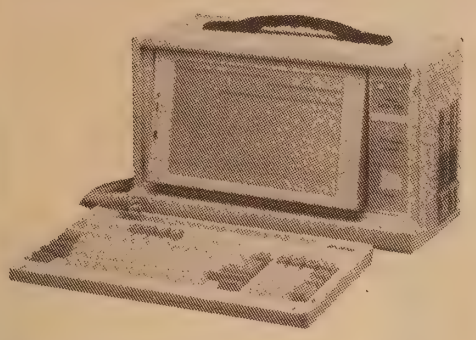

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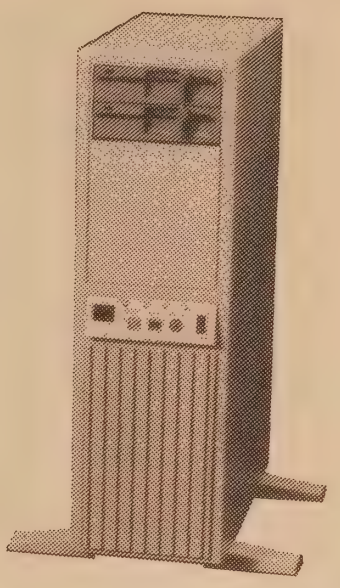

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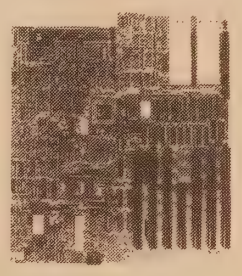

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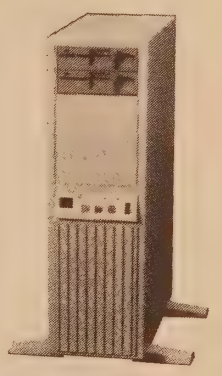

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titles only appear for a single system, but this is rare. A game that sparkles on one kind of computer is often a turkey when implemented in another operating system. Market-driven conversions are seldom programmed with the same dedication and imagination as originals.

There are many kinds of computer games. Many players seem to be interested only in a single category, like Fantasy Role-Playing, or Military-Historical Simulation. To cover the territory, I've established the following ten categories, and selected a winner in each.

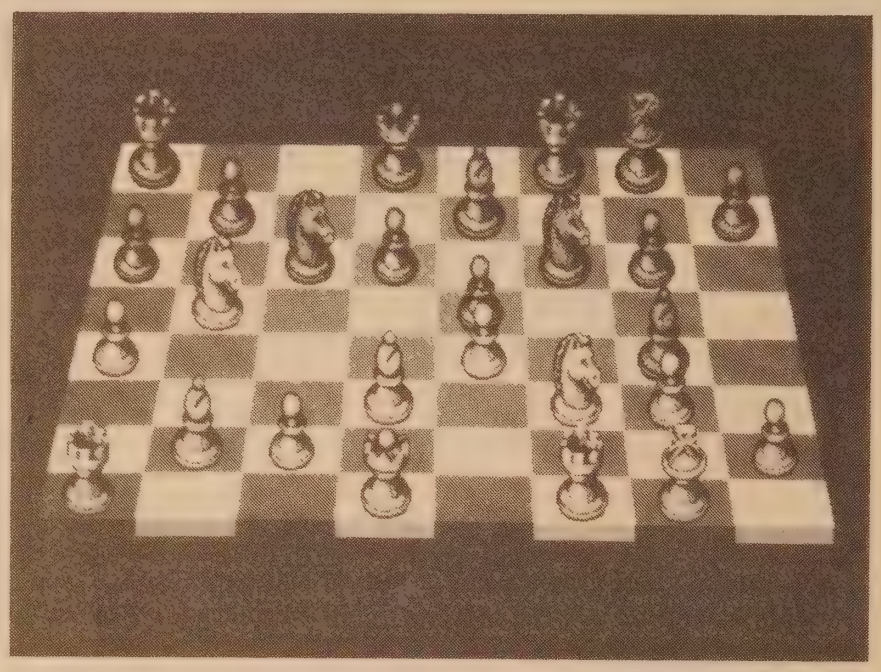
Here goes...

1. Best Chess Program

Chess is the Queen of Games, and the age-old quest for an unbeatable chess-playing automaton has been a powerful force in the history of computer programming. There are excellent chess programs for every kind of computer, but this year the winner is:

Chessmaster 2100
Software Toolworks
IBM PC version reviewed (also available for the Apple II, IIGS, Commodore 64/128)

An earlier version, *Chessmaster 2000*, collected an impressive array of awards; this version adds more features, more options and a more sophisticated computer opponent. You can select a classic two-dimensional view of the board, or a strikingly realistic 3D display. The package includes an excellent tutorial and 110 famous historic chess games for study. There are multiple levels of difficulty, and you can set the depth to which the program will evaluate future positions before making its move (the farther ahead it looks, the longer it takes to decide). Documentation is excellent.



***Chessmaster 2100* is another award winner from Software Toolworks.**

2. Best Text-Based Adventure Game

Journey
Designed by Marc Blank
Published by Infocom
(Apple II, Macintosh, Amiga)

Described as an "interactive role-play chronicle," this is a new type of menu-driven adventure that combines challenging puzzles with well-written prose. The settings and situations are the usual shameless ripoff of the material that J.R.R. Tolkien looted from all the mythologies of Northern Europe. Infocom virtually created the text-based adventure game, and it's good to see that they are willing to apply some new methods to the Same Old Elves and Wizards.

3. Best Graphic Adventure Game

Bard's Tale
Designed by Interplay Productions
Published by Electronic Arts
(Macintosh)

Dark Castle and *Beyond Dark Castle* from Silicon Beach proved that it was possible to have a good illustrated adventure in black and white (actually, Dore's 19th century engravings for Coleridge's *Rime of the Ancient Mariner* proved this long before anybody even imagined a video screen).

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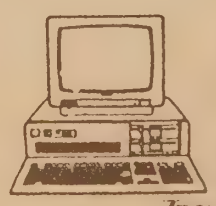

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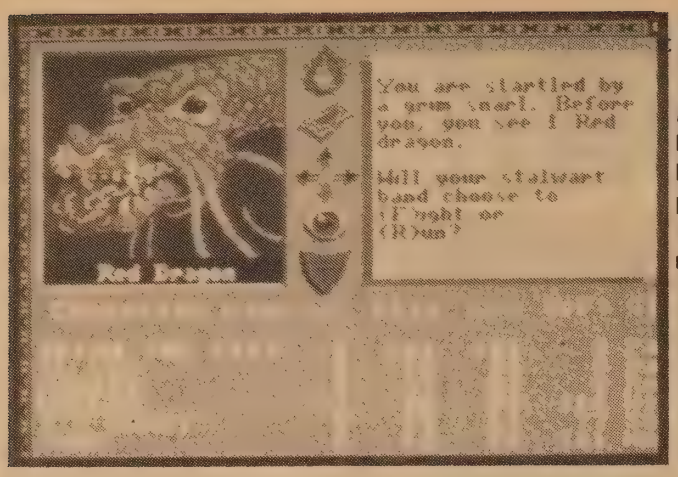


***Bard's Tale* from Electronic Arts is based on the popular *Thieves' World* series of novels.**

Bard's Tale is based on the popular *Thieves' World* series of novels, which combine the atmosphere of Merrie Olde Medieval England with the metaphysics of a bad acid trip through Babylonian religion. *Bard's Tale* adds some nice music to the conventional game structure of wandering around in dungeons killing things and picking up stuff. There are only about 20 pages of spells to learn. Once you're hooked, the hint book is available for $12.95.

Honorable Mention

Prince of Persia
Brøderbund
(Apple II)
Jordan Mechner, who designed the martial-arts adventure *Karateka*, has done it again for swordplay and swashbuckling. The plot line is similar—you have to hack and slash your way through a maze of increasingly tough opponents to rescue a princess. The animation effects are based on careful study of hours of live-action footage, including classic films of the Thirties. A very effective musical score enriches the game. Unfortunately, the graphics look poorly on the IIGS, and the maze was just too confusing to hold my interest.

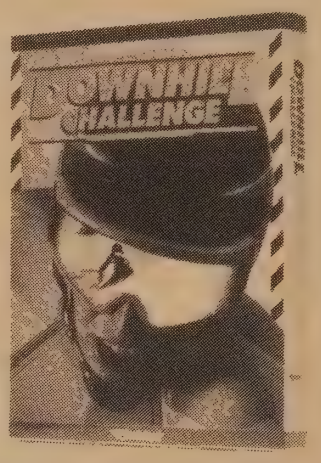
4. Best Sports Simulation

Jack Nicklaus Golf
Accolade
(IBM PC, Apple II, others)
Some people have trouble accepting golf as an actual sport, but the slow pace of the game and its green surroundings make it pleasant to simulate on a computer.

The Jack Nicklaus empire ("Golden Bear Productions") has now added a line of computer games to the best-selling videotapes and accessories. The interface is basically similar to Accolade's *Mean 18*, with a power gauge that you use to control your swing. This game adds the effects of wind, and many other variables and options.

Special Mention

Worst Sports Simulation
Downhill Challenge
Brøderbund (programmed by Microids)
Apple IIGS version reviewed (C-64, Atari ST, Amiga and Apple IIGS versions also available)
Programmed in France, this simulation includes downhill skiing, slalom, giant slalom, and ski jumping. Documentation is terrible, but the super hi-res graphics, animation and sound effects make this almost forgivable.



***Downhill Challenge*—worst sports simulation.**

5. Best Classic Arcade-Action Game

Arkanoid and Arkanoid II
Taito
Apple IIGS version reviewed
Taito is Japan's largest manufacturer and operator of arcade games. They've been in the business since 1953. They intend to compete in the Commodore, Amiga, IBM PC, Apple II and Atari computer game market, and they offer high quality at low prices. The *Arkanoid* games, brilliantly programmed by John Lund and Ryan Ridges, are wild and crazy extensions of "Brick Out," a game genre familiar to every Apple II owner (Apple used to include it on the system disk). You move a paddle left or right to continuously bounce a ball against a wall of bricks. When you hit a brick it disappears. When you fail to return the ball, you lose it. When all the bricks are gone, you win.

continued on page 210

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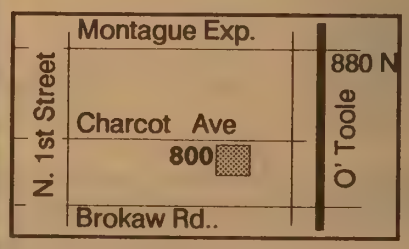

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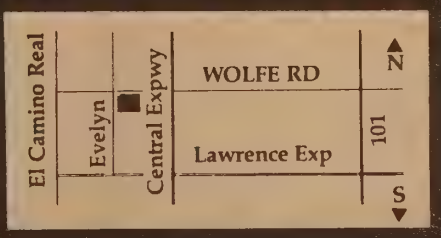

USER GROUP NETWORK

BY MARY EISENHART

New Ones Coming As The Old Ones Go

A transitional month, seemingly, with news of changes coming from all over.

Faithful correspondent **Curtis Jones**, who's been the secretary-treasurer of **APL BUG** for lo these many years, has written to tell us that the group's elected new officers and he's managed to find somebody to take over his duties. **Tibor Horvath** is the new contact person for the group, which focuses on the use of the APL programming language. You can reach him at (415)283-5613.

Curtis also wants to pass along the news that the group's January 8 meeting will feature a presentation by **Dr. James A. Brown**, chief architect of APL2. "Jim Brown hasn't settled on a topic yet," says Curtis, "but since he's been highly influential in shaping changes to the language incorporated in IBM's APL2 and adopted by some other APLs, there's considerable interest in any talk he gives."

As for himself, Curtis says, "I may have a good bit to do in my role of librarian, since the APL BUG library now has three different free or shareware APLs available." Thanks to Curtis for his years of faithful information-providing, and we hope to hear from him from time to time.

Not exactly good news from the **Bay Area Heath Users Group. Ed Hayes** writes to tell us; "Like many orphan user groups, our attendance at the meetings has fallen to an unsustainable low, and we have, temporarily I hope, discontinued the meetings. I am still running the Bulletin Board, BAHUG, under full steam and with full support of the local Heath/Zenith Veritechnology store in Redwood City." You can reach the BAHUG BBS at (415)365-7836, 8-N-1, 300/1200/2400, 24 hours a day. You can also reach Ed for general Heath/Zenith info at (415)326-4486.

Says Ed, "Thank you for your help in keeping those of us who have bought Heath/Zenith computers from becoming lost in the morass."

We recently heard from **Randy Dunagan** of **CompuMentor**. CompuMentor, you'll recall, matches computer-skilled volunteers with nonprofit agencies struggling with their computers. Right now the need for mentors with particular skills is reaching crisis proportions in the Bay Area.

Among the needs: *dBASE* users and programmers and *R:BASE* programmers in San Francisco, Berkeley, and Oakland; PC *PageMaker* help in Contra Costa County (in fact, they need mentors with all kinds of skills in CC County and on the Peninsula); people with experience using the *Insight* accounting package on the Mac, and people who use accounting software on PCs; phonebank mentors who are willing to take calls for help over the phone; general-purpose Mac expertise in Oakland and Berkeley. Also needed everywhere are mentors with Apple II skills and those who have formal training experience.

So if you'd like to share your computing skills with people who would *really* appreciate it, give Randy a call at (415)255-6040.

Groups on the move: **MUCoW**, the **Macintosh Users of ComputerWare**, is now meeting at 7 pm on the third Tuesday of the month at ComputerWare's Palo Alto store at 490 California Avenue. The December 19 meeting will feature information-gatherer **Chuck Farnham**, and the January 16 gathering will be a Mac Birthday celebration honoring members of the original Mac design team. You can get more information by calling (415)496-1068.

Also on the move is the **Marin-Sonoma PC Users Group**, which formerly met at Dominican College. The new meeting location is the San Rafael Community Center at 3rd and B Streets next to Safeway. For time and other info, call **John Hawkins** at (415)491-HAWK.

Until we meet again, which is probably some time next year, we'd like to wish you all the happiest of holidays and the best of new years. And keep that mail coming! US Mail should go to User Group Network, 5951 Canning Street, Oakland, CA 94609. Faxes are welcome at (415)652-4618 or (213)467-5486. Email can be sent to **microx** on **The WELL** (415/332-4335), **MICROTIMES** on **MacNET**, or **{pacbell, hplabs, ucbvax, apple}!well!microx** on uucp. Thanks, and have a great month! ■

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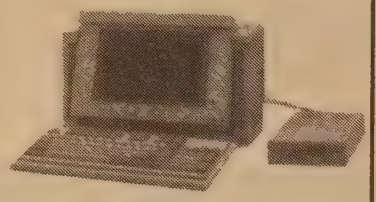

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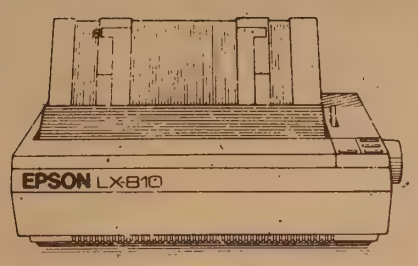

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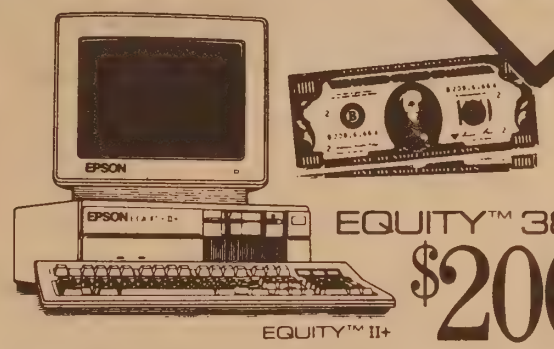

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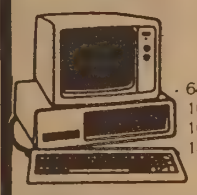

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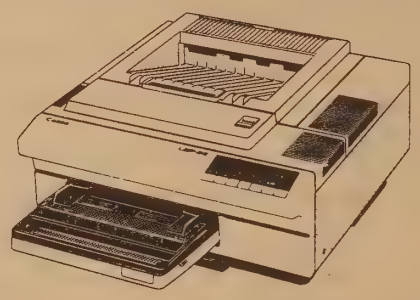

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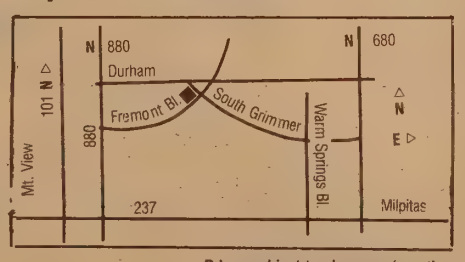

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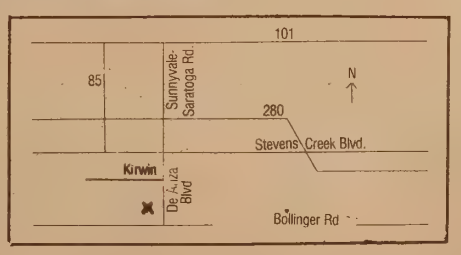

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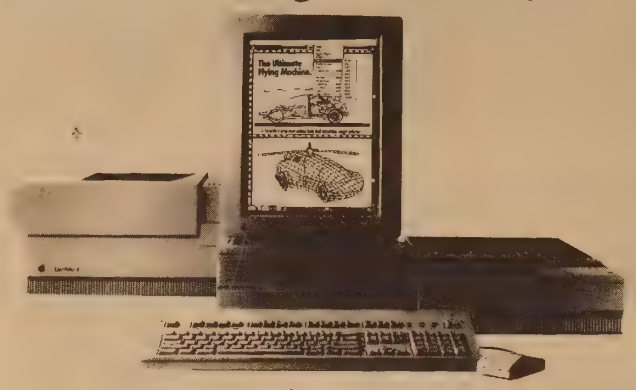

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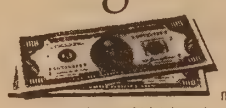

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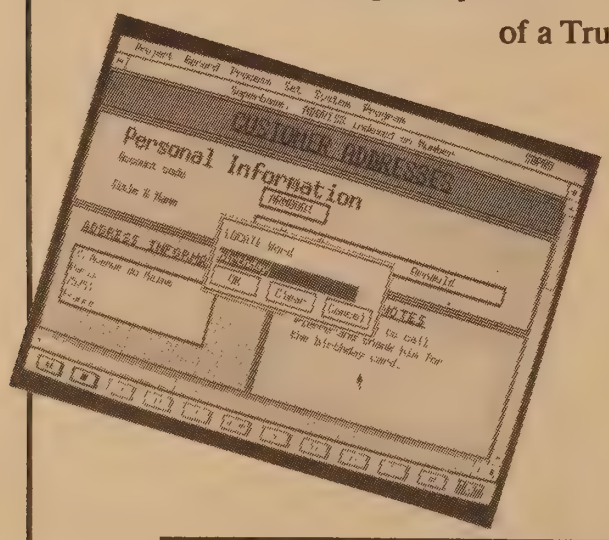

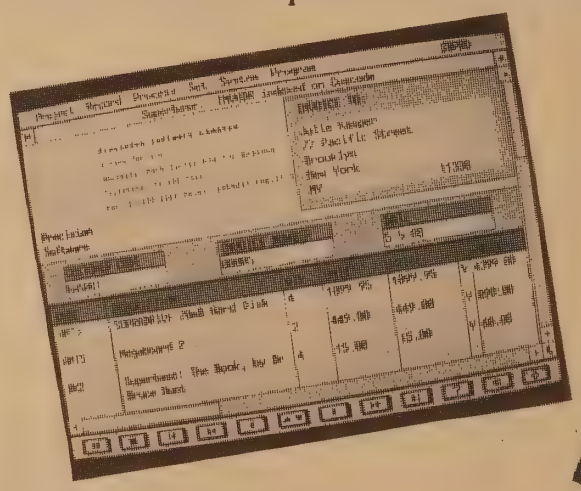

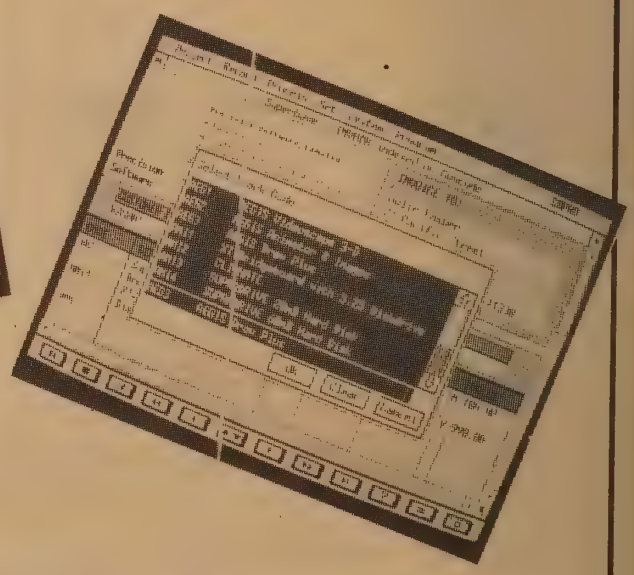

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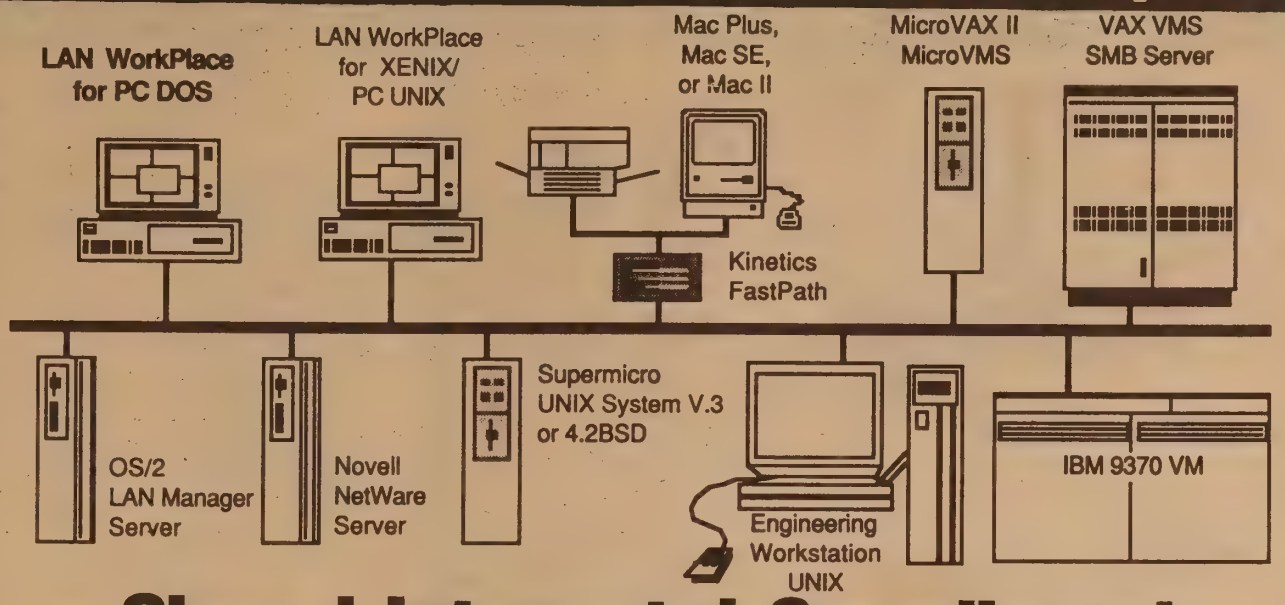
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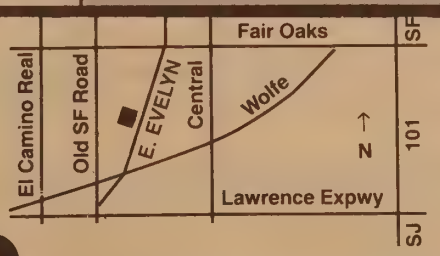

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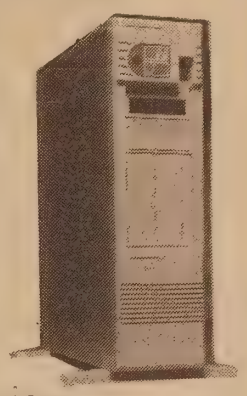

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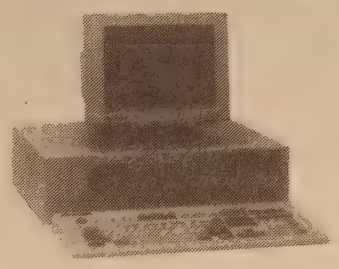

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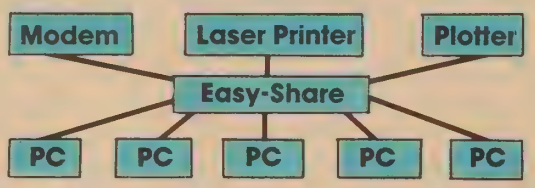

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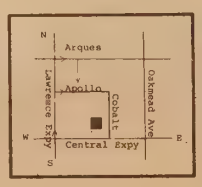

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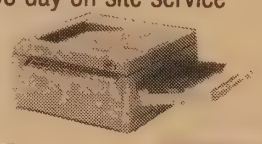

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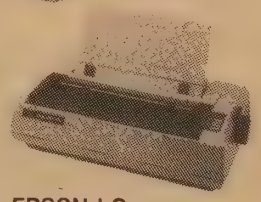

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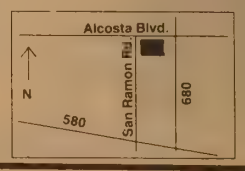

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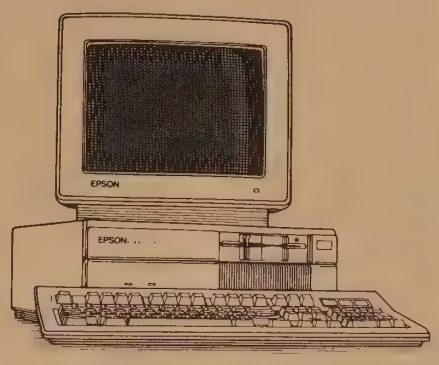

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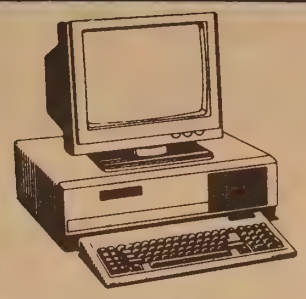

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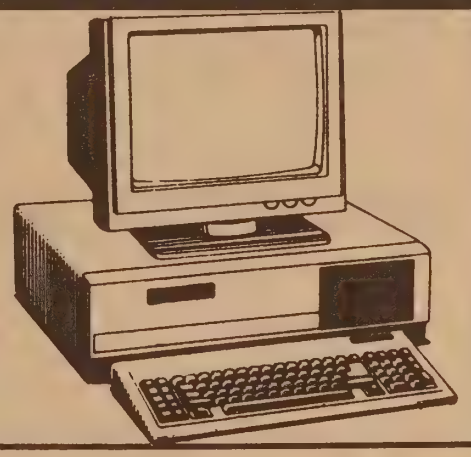

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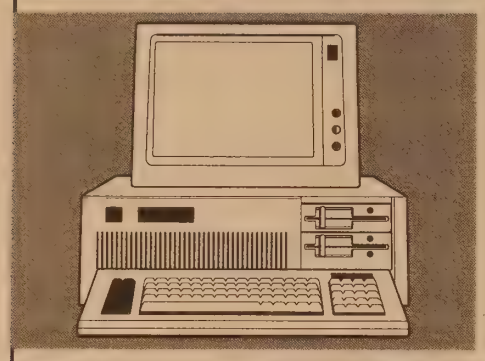

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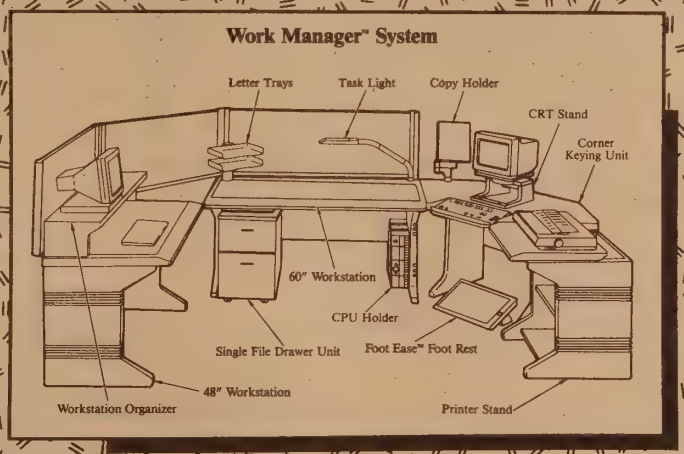

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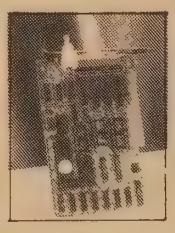

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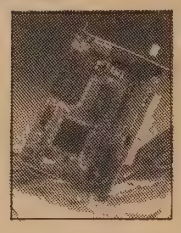
- STAR/BUS



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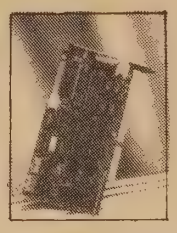

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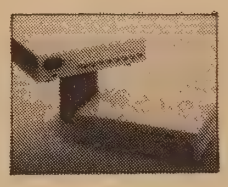

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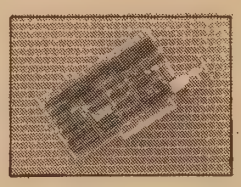

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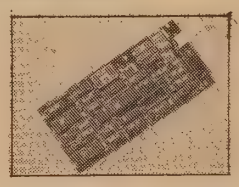
- COMPATIBLE



- 16 BIT
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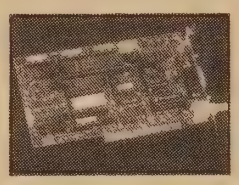

- 8 BIT
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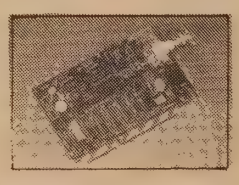

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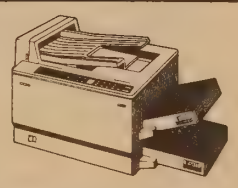

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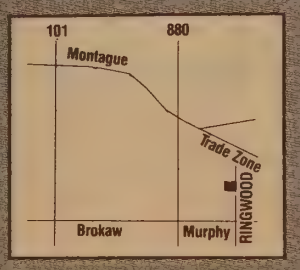

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Association for Women in Computing. Meetings: 1st Wednesday of each month, 6:30 pm, Stagecoach Restaurant, 44 Montgomery St., San Francisco. Call 655-3110 for information.

BAY HPX. Meetings: 2nd Saturday Laptop & handhelds. Call Jim Horn or Michael Felsenstein: (707)794-3130/(415)564-8279.

Bay Area CYMA Dealers Association. Meetings: 2nd Tuesdays, Thursdays; 4:30-6:30 pm, San Mateo. Networking and support for McGraw-Hill accounting software consultants and retailers. Call: (415)345-5955.

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California Genealogical Society Computer Interest Group. Meetings: 2nd Sat.-odd months, Genealogical Society Library, San Francisco.

Computer Associates Users Group. Meetings: 3rd Wednesdays, 6:30 pm, 1500 Van Ness Ave. Call: Beth Markus, (415)864-6770.

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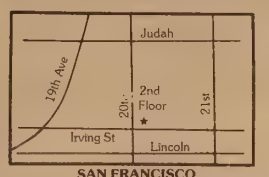

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High Tech Gays. Meetings: 2nd Sundays, Part of the National Gay & Lesbian Task Force. Call: (408)993-3830.

High Technology Entrepreneurial Council. Meetings: Wednesdays, 6:30 pm, Piedmont Community Center, 711 Highland Ave., Piedmont. HTEC is a nonprofit corporation dedicated to providing software developers and other high tech entrepreneurs a forum for developing marketing strategies, building business relationships and exchanging experience and information. Call: Rachel Munoz, (415)339-3895.

Independent Computer Consultants Association (ICCA). A national professional association dedicated to ethical standards in computer consulting. Provides a computer consultant referral service. Meets monthly. Call: (415)441-2948.

Microcomputer Users of Santa Cruz Fog Affiliate #116. Meetings: 2nd Thursdays, Green Acres School, 966 Bostwick Lane, Santa Cruz. This facility is wheelchair accessible. Call: Barney, (408)476-0504.

MORE: Modemusers Of The Redwood Empire. Meetings: Thurs. July 14; Fri. Aug. 9; 7 pm, Roundtable Pizza, Highway 12 @ Stony Pt. Free membership for modemers who want to get together and talk about local boards. Includes novices to techno-wizards. Call (707)546-5203.

Mt. Diablo Technology Association. First meeting: Wednesday, Sept. 14. Others monthly at Michael's Restaurant in Walnut Creek. Lunch and evening meetings, send for calendar. Back by popular demand. Will explore common concerns in industry and educational developments. Call: Deborah Scott, (415)932-4828.

Network Users Group (NUG). Next meeting: July 7. Call for location and time. Panel discussion of workgroup software with several major software manufacturers represented. Call: (415)655-6500 for details.

North Bay Users Group (NBUG). Meetings: 2nd Thurs. 7:30-10 pm, 201 Maine St., Vallejo, CA. Family Computer Club dedicated to all forms of computing. Determine market opportunities, group research projects. (415)564-6669.

Northern California User Group. Meetings: Every 3 months. For schedule, Call: Ken Lebeiko, 881-2652.

Nota Bene User Group. Meetings: 3rd Tues. or Thurs., 7:30 pm Berkeley or Peninsula. For location and date, call: Thomas Ross, (415)845-2410.

PASS: Professional Association of Secretarial Services. Meetings: 2nd Saturdays 11:30 am, Oakland or San Mateo. Call: Nina Feldman, (415)655-4296.

Pioneer AWSSM (Association For Worldwide Software Support Managers). Meetings: 2nd Tuesdays, 6 pm. Call: Janice Corbo, 3Com Corp., (415)694-2841.

Pracsa, for Sysops & Users. Meetings: 2nd Wednesdays, 6:30 pm, Coco's Restaurant, 1305 South Mary, Sunnyvale. Call: Bill Strouse, (408)453-3321.

ProTel (Professionals In Telecommunications). Meetings: Monthly. Holiday Inn, 1221 Chess Drive, Foster City. ProTel is a network organization for people interested in telecommunications. Leave a message at (415)227-5637 for information.

San Jose User Group. Meetings: First Wednesdays. For location and time, call: Hanna Varniz, (408)984-8484.

SEF Marketing SIG. Meetings: 4th Thursdays, Teknowledge, 1850 Embarcadero, Palo Alto. Call: Don Morrison, (408)425-7222, or (415)854-7219.

Silicon Valley Computer Society. Contact Kent Stafford (408)286-2969. Or write to 2464 El Camino Real #190, Santa Clara, CA 95051.

Software Entrepreneur's Forum (SEF). Meetings: 3rd Thurs. 1875 Embarcadero Rd., Palo Alto. Helps individual software developers and startup software companies. Call for complimentary newsletter. (415)854-7219.

Technology Executive Roundtable (TER). Meetings: Fourth Tuesdays, 6:00 pm, Santa Clara.Call: Jenny Hoyt, (408)997-1826.

The Hispanic Computing Association. Meetings: 3rd Thursdays, DataDesigns/American Music, 2388 Mission St., SF. Spanish/English Computer Information, PC & Mac presentations and solutions. Call: Juan Lira, (415)824-8337.

United Sysops Association (USA). Meetings: 2nd Wednesdays, Coco's Restaurant, 1305 S. Mary Avenue, Sunnyvale. The emphasis of the group is to help the sysops around the world, and especially in the countries of the Pacific Rim. Call: William Strouse, (408)453-3321.

Valley of the Moon Users Group. Meetings: 2nd Saturdays monthly, 10:00 am, Moose Lodge, Sonoma. All systems welcome. BBS, 300 Baud, 24 hours, (707)996-7922.

Women's Computer Society. New organization to increase the computer literacy of women of all ages. WCS will represent a number of SIGs, including the already established Women's Macintosh User Group (Women's-

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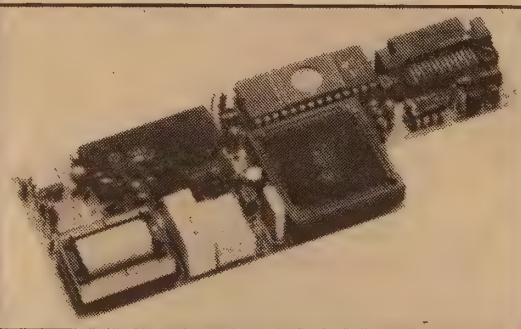

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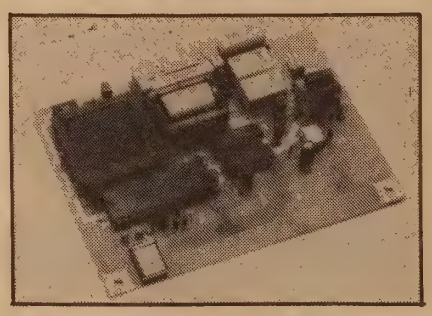

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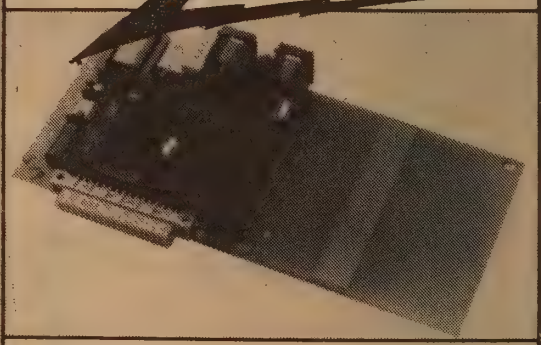

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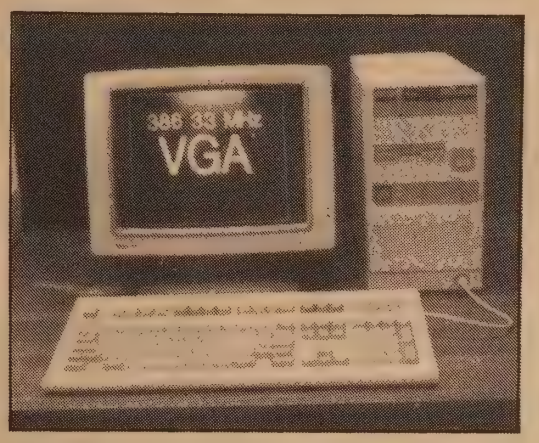

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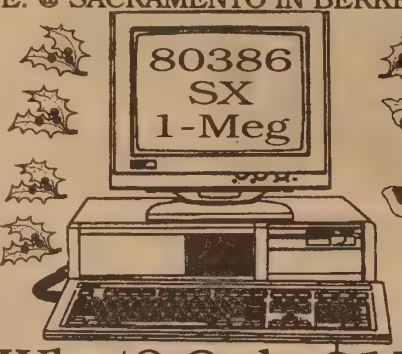

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MUG). Call: Rita Zokaei or Judy Onton, (415) 574-8225/(408)867-2842.

Women's Special Interest Group. 7:30 pm, Hewlett-Packard, 5301 Stevens Creek Blvd., Santa Clara. For all women interested in computing. Call: Rita Zokaei, (415)574-8225.

User Groups

AMIGA

ACCESS (Amiga + Commodore Computer Enthusiasts Society). Meetings: 2nd Thursdays, 7 pm, Livermore Airport terminal off I-580 Airway exit. Call: Paul Tibbals, (415)829-6053.

Amiga Addicts Anonymous. Meetings: Newsletter, public domain library, demonstrations. Write PO Box 4669, Walnut Creek, CA 94596. Call: (415)689-3453.

Amiga East Bay Info Exchange (AEBIE). Meetings: 2nd Tues., 7 to 9 pm, 11185 San Pablo Ave., El Cerrito. Write to P.O. Box 485, Pinole, CA 94564.

ASCITEC: The Amiga Science & Technology Users Group. Meetings: 2nd Thurs., 5-7 pm, Lockheed, B/157, Rm. 4-C, Sunnyvale, CA. Scientific/Video Applications. Classes available.

AUGment - Amiga Users Group of Silicon Valley. Meetings: 2nd Fri., Write to P.O. Box 1863, Fremont, CA 94538 for more info.

AUM—Amiga Users Of Marin. Meetings: Third Wednesdays, 7:30 pm, room 191, Science Center, College of Marin, Kentfield. Call: Bob Galvan, (415)924-5384.

Bay Area Amiga Developers Group (BADGE). Meetings: 3rd Thurs., 8 pm, Turing Auditorium, Stanford University, Stanford, CA. For all Amiga programmers. No membership fee.

CWEST Bay Area Commodore Users Group. Meetings: Third Thursdays, 7:00 pm, Fort Mason, Bldg. C, Rm. 215. Support C-64/128 and Amiga. New Users welcome. Write PO Box 146731, San Francisco, CA 94114-6731.

HAUG (Hayward Amiga Users Group). Meetings: 1st Wednesdays, 7 pm, Mulford Gardens Community Center, San Leandro. Call: Ken, (415)352-0220, or Kenny, (415)351-7349.

Northern California Amiga Club. Meetings: Second Saturdays, 2 pm, Rico's. Supports Amiga. Write: PO Box 54, Bella Vista, CA 96008.

SMAUG (Salinas-Monterey Amiga Users Group). Meetings: 3rd Tues., at 7 pm, Seaside Library, 550 Harcourt Ave., Seaside, CA. Write PO Box 776, Castroville, CA 95012. Call Richard Binsacca at (408) 678-2518.

SVAUG-Scotts Valley Amiga Users Group. Meetings: 2nd Thursday, 7:00 pm, The Computer Room, Kings Village, Scotts Valley.

Vallejo Amiga People (VAMP). Meetings: 2nd Tues., 6:30 pm, Software 1st, Vallejo Corners Shopping Center. Contact Bill Braun at (707) 554-0263.

AMSTRAD

Amstrad Word Processing User Group (AWPUG). We are an exclusive Amstrad PCW Word Processing User Group. Call: Dennis Anderson, (707)795-8548.

North American Amstrad Users Group (NAAUG). National User group. For info send S.A.S.E. to NAAUG, P.O. Box 2178, Ferndale, WA 98240.

APPLE

A.P.P.L.E. Co-op. Meetings: National User Group. Call A.P.P.L.E. Magazine. Write: 290 S.W. 43rd Street, Renton, WA 98055. Or call (206)251-5222 for more info.

Apple Pickers of the Redwood Empire. Meetings: 2nd Sat., 10 am, Santa Rosa JC, Shuhaw Hall, Rm. 1735. Call for sample newsletter. (707)763-8322.

Apple Sac. Meetings: 1st and 2nd Wednesdays, 3rd Tuesdays, 7 pm, Madison School on Harrison St. in Sacramento. Newsletter, demos, swap meets, PD files, BBS.

B.E.A.R. Apple II National Users Group. Meetings: send S.A.S.E. to B.E.A.R., 4719 Meridean Ave. #401, San Jose, 95118. Printshop & Appleworks files, monthly newsletter.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri., 7 pm, Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

GravenStein Apple IIGS Users Group. Meetings: 3rd Saturdays, 10:00 am, Coddingtown Mall, Santa Rosa. User group to explore new and existing programs and uses for the IIGS, to order equipment and material as a group for quantity discounts and to encourage the use and development of the IIGS among current, new and potential users. Call: Aaron Lamar, president, 938-8479.

San Francisco Apple Core. Meetings: 2nd Tuesdays, 10 am, Daly City Library, 40 Wembley. BBS, SIGS, PD/SW library, Help List, Newsletter, more. Call: 398-2335/771-5830.

San Leandro Apple User Group. Meetings: 1st Thursdays, San Leandro HS, Rm. 213. New owners to experienced users welcome. AppleWorks, software and telecommunications SIGs meet monthly. Call: (415) 483-6046.

Society For The Prevention Of Cruelty To Apples. Meetings: 2nd Wednesdays, 7:30 pm, Fremont Main Library, 39770 Paseo Padre Pkwy. Call: Dean Fern, (415) 537-3439.

Tri Valley Apple II Users Group. Meetings: 1st Thurs., 6:30 pm. Call Esther Farnstrom at (415) 829-3672 or Dan Balsey at (415)828-6237 for meeting location.

ATARI

ABACUS (Atari Bay Area Computer Users Society). Meetings: 1st Saturdays, 19th Ave. Diner, 19th & Lincoln Aves., SF. Open to all Atari XL/XE and ST users. $20/yr. Call: (415)753-8483.

Bay Area Atari Users Group (BAAUG). Meetings: General meeting and ST users meeting 1st Mon., 7:00 pm, Bracher School, corner of Bowers and Chromite, Santa Clara. On 2nd Tuesdays. 8-bit users meet at H-P, Wolf and Pruneridge, Cupertino. BBS: (408)247-1257.

COAST (California Original Atari ST Users Group). Meetings: 3rd Wednesdays, 7 pm, 2105 Bancroft, Berkeley. Call: (415)945-1949.

Diablo Valley Atari Computer Enthusiasts (DACE). Meetings: 1st Thursdays, DACE supports all Atari computers. Newsletter, demos, raffles, DOMs, and programming SIGs. Call: Larry, (415)689-5160.

Sacramento ST Users Group. Meetings: Second Wednesdays, 7 pm, Pac Bell Auditorium, 2700 Watt Ave., Sacramento. Supporting Atari ST and Mega ST computers.(916)944-1291.

San Leandro Computer Club. Meetings: 1st Tuesdays, 8 pm, San Leandro Community Library. Keith Sammons, (415)887-2008.

South County Atari Users Group. Meetings: 2nd Wednesdays, 7 pm, San Jose Computer Store, 640 Blossom Hill Rd., San Jose. Call: Ron Reade, (408)225-7162.

AT&T

AT&T Computer UNIX User Group. Meetings: 4th Wednesdays, 7 pm, AT&T Building, 1090 East Duane, Sunnyvale. Call: Thad Floryan, (408)985-7108.

AT&T Computer Users Group - South Bay. Meetings: Third Wed., 7:00 pm, AT&T Bldg., 1090 E. Duane, Sunnyvale, CA. Call: Joe Lipsig (408)522-4114. BBS: (408) 462-6329.

North Bay AT&T Computer Users Group. Meetings: 1st Wed., 6:30 pm, AT&T building. Call: Joe Mahoney (415)586-8376. BBS: (415)829-6027.

Tri-Valley AT&T Computer Users' Group. Meetings: Third Thursdays, 6:30 pm, 5794 West Las Positas Blvd., Pleasanton. Call: Ed Novi, (415)224-2996, Joe Mahoney,

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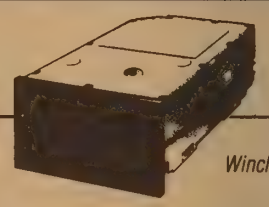

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San Francisco/Marin AutoCAD Users Group. Meetings: 2nd Tuesday evenings. $20 annual membership fee & newsletter. For further info, call Volker, 331-9466

Sonoma County AutoCAD Users Group. Call (415)777-9144 for info.

TCUG, Textile Computer Users Group. Meetings: Bimonthly, call coordinator for location and time. Thirty-seven members and growing. We use all types of computers to produce textile designs and run textile equipment. Call: Margaret Copeland, (415)284-1635.

COMMODORE

ACCESS (Amiga + Commodore Computer Enthusiasts Society). Meetings: 2nd Thursdays, 7 pm, Livermore Airport terminal off I-580 Airway exit. Call: (415)829-6053.

ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues., 7:30 pm, Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron Kremkow at (415)449-1784.

Campbell Chapter of 64/More Commodore UG. Meetings: 4th Tues., BBS (408)946-6154.

Commodore 64 Software Users Group For New Commodore Owners. One-on-one help for new owners. Meeting place & time TBA by members. Call (714)531-2977 for info.

Commodore Connection Users Group. BBS (415)458-1005.

Cupertino Chapter of 64/More Commodore UG. Meetings: 3rd. Sat., BBS (408)946-6154.

CWEST Bay Area Commodore User Group. Meetings: 3rd Thurs., Fort Mason, Bldg. C, Rm. 215. Supports C-64/128, Amiga. Write P.O. Box 146731, San Francisco, CA 94114-6731.

Diablo Valley CUG. Meetings: 3rd Thurs., 7:30 pm, 1331 Concord Ave, Concord, PO Box 27155, Concord, CA 94527. For info write: PO Box 27155, Concord, CA 94527. Or call (415)932-2413.

F.U.N.H.U.G. - Fremont, Union City, Newark, Hayward User Group. Meetings: 3rd Thurs., 7:30 pm, Newark Public Library, 6300 Civic Terrace Ave., Newark, CA. A user-organized, user-operated user group not affiliated with any computer or software manufacturer or distributor.

Fairfield Commodore User Group. Meetings: 1st & 3rd Mon., Solano County Education Bldg. Write to P.O. Box 2778, Fairfield, CA 94533-9998 for info.

Marin Commodore Users Group. Meetings: 2nd Wednesdays, Redwood High. Call: 883-7748; BBS 883-2558—300/1200.

Mother Lode Commodore Users Group. Meetings: 2nd & 3rd Thursdays, 7:00 pm, Calaveras County Water District Board Room. Supports the Commodore PET, VIC, 64, Plus/4 C-16 & 128. Call: Larry Anderson, 754-5530.

Napa Valley Commodore Computer Club. Meetings: Third Mondays, Rapoport's, 2225 Brown St., Napa. Write to: PO Box 2324, Napa, CA 94558.

North Valley Chapter of 64/More Commodore UG. Meetings: 2nd. Sat., BBS (408)946-6154.

PLUG (The Plus/4 Users Group). No regular meetings. Over 800 members internationally. Write to P.O. Box 1001, Monterey, CA 93942 for info.

San Jose Chapter of 64/More Commodore UG. Meetings: 1st. Sun., BBS (408)946-6154.

Silicon Valley Commodore Club. Meetings: 4th Wed., 7 pm, Hewlett-Packard, 5301 Stevens Creek at Lawrence & 280. C-64, C-128, & Amiga.

COMPUTER ASSOCIATES

Computer Associates Users Group. Meetings: Third Wednesday of the first month of the quarter, 238 Texas St., San Francisco. Come share ideas and information with other local users of Computer Associates Accounting Software. Call: Beth E. Markus, (415)864-6770.

DATAEASE

Bay Area DataEase Users Group. Meetings alternate between San Francisco and Palo Alto. Contact Kermit Carter at (415)945-7817 for info.

DBASE

dBASE SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm, 6 N. San Pedro Rd., San Rafael. Call: John Stephenson, (415)488-0342.

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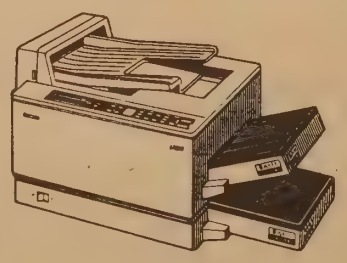

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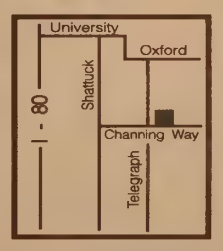

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DESKTOP PUBLISHING

Bay Area Desktop Publishing User's Group. Meetings: Thursdays at 2601 College Ave., Berkeley. For more info call Dr. C.J. Wallia at (415)848-8200.

Desktop Publishing SIG/GMUG. Meetings: 1st Tuesdays, 7 pm, San Francisco Business Times Building, 325 Fifth St., San Francisco. Call: 641-GMUG

Desktop Publishing SIG/SFPCUG. Meetings: 4th Tuesdays, 7:30 pm, 179 Parnassus Ave., SF. Call: Phil Smith, (415)566-3648.

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PC Publishers Of Northern California. Meetings: 3rd Thursdays, 6 pm, 10430 Greenview Drive, Oakland. Chapter of Ventura Users Group. Membership $36/year, includes magazine, newsletter, & discounts. Call: (415)635-0159.

San Mateo Ventura Users' Group. Meetings: 2nd Mondays, 7:00-9:30 pm, 619 Bradford, Redwood City. Workshops, lectures, demonstrations of new techniques, shortcuts. Call: Eleanor Church, (415)726-3181, or Pam Sheble, (415)574-2003.

Ventura Desktop Publishing Users Group. Meeting: 1st Tuesday, 7-9:00 pm, 1650 S. Amphlett Blvd., San Mateo. Newly formed group. Call Eleanor Church at (415)726-3181, or Pam Sheble at (415)574-2003 for information.

VPUG (Ventura Publisher User Group). Meetings: 3rd Mon., 6:30 pm, Fort Mason, Bldg. A., Rm. 5, San Francisco, CA.

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EAGLE

Eagle Computer Users Group. Meetings: 2nd Sat., 9:00-12 noon Tandem Computer, 10435 N. Tantau Ave., Cupertino. Call: (408)972-1965.

EASYTRIEVE

Easytrieve Plus Users Group. Next meeting: June 14, Hyatt, Oakland. Call Debbie at Pansophic, (415)573-7100. All users welcome.

EPSON

Bay Area Epson Salts. Meetings: First Tuesdays, 7:30 pm, 2611 Broadway, Redwood City. Call: Joe, (415)364-0232; or Tom, (415)992-5475.

Epson Users of San Francisco Bay Area. Meetings: 1st Thurs., 7-10 pm, Fort Mason, Bldg. C, Rm. 216, San Francisco, CA. For users of Epson (QX, Equity, PX-8). Presentations, support network, newsletter, public domain software.

EXPERT SYSTEMS

Bay Area Expert Systems In Financial Services. Meetings: 4th Wednesdays, downtown San Francisco. Open to managers, programmers, and analysts in the financial services industry. Call: Blair Hesling, (415)624-3049.

FOXBASE+

FoxBase+ User Group. PO Box 20607, Oakland, CA 94620. New group now forming. Call Rachel Cohen, (415)465-3570.

GAVILAN

Gavilan User Group. Meetings: 2nd Thurs., 7 pm, Lockheed Bldg. 162. Call (408)379-2774 for info.

HEATH

Bay Area Heath User Group (BAHUG). Meetings: 2nd Tuesdays, 7 pm, 2001 Middlefield Rd., Redwood City. Call: Ed Hayes, (415)326-3311.

HYPERCARD

HyperCard SIG/GMUG. Meetings: 2nd Wednesdays, 7 pm, 78-A Mars St., San Francisco. Call: 641-GMUG.

HyperCard SIG/SEF. Meetings: First Thursdays, 7 pm, Foothill College. David Gewirtz, (415)345-4620, or (415)854-7219.

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Beginners SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: (415)211-9166.

Berkeley PC/Compatible User Group. Meetings: 2nd Mondays, 7:00 pm, 2618 Telegraph Ave., Berkeley. No fee, bulletin board, public domain library. Call: Mel, (415)526-4033.

C Language SIG/SFPCUG. Meetings: 2nd Mondays, 6:30 pm, Kam's Restaurant 2068 Center St., Berkeley. Call: Debee Norling, (415)644-1855.

Columbia SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Dennis Tye, (415)566-0587.

CUE Club. MS-DOS machines. SIGs for other computers. BBS: (209)239-9853. For more info call (209)858-4401.

DataPerfect SIG/SFPCUG. Meetings: 2nd Mondays, 7 pm, Kam's Restaurant, 2068 Center St., Berkeley. Call: Christy Quinn (415)644-1855.

dBASE SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm, 6 No. San Pedro Rd., San Rafael. Call: John Stephenson, (415)488-0342.

Desktop Publishing SIG/SFPCUG. Meetings: 4th Tuesdays, 7:30 pm, 179 Parnassus Ave., SF. Call: Phil Smith, (415)566-3648.

Diablo Valley PC Users Group. Meetings: Walnut Creek, CA. Write: P.O. Box 8040, #117, Walnut Creek, CA 94596.

East Bay Fog. Meetings: Monthly meetings, Apostleship of the Sea, 600 Terminal St., Oakland. Newsletter, BBS. Call (415)272-9099 for more info.

Enable SIG/SFPCUG. Meetings: 2nd Wednesdays, 7:30 pm, Walnut Creek. Call: Sandi Baker, (415)946-1716.

FUNHUG—PC. Meetings: 3rd Wednesdays, 7:30 pm, Fremont Library, 39770 Paseo Padre Parkway, Fremont, in the Meeting Room. Mainly just the MS and PC DOS world. Send SASE to Russ Fischer, 2792 Arlington Place, Fremont 94555.

IBM & Compatibles Users Group (ICUG). Meetings: A mail-based user group with possible meetings. Not for PCjrs. $8/yr. Write: Dan Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

IBM Compatible Users Group. Meetings: monthly, call (415)969-6916 for info 7-10 pm.

IBM PC Users' Group Of The Redwoods (PCUGR). Meetings: 2nd Thursdays, 7 pm, Santa Rosa Vets Memorial, East Dining Rm. Newsletter, BBS, public domain & shareware disk library, $25/yr. Call: (707)527-USER.

IBM Technical SIG/SEF. Teknowledge. Call for dates and time. Call: Mike Schmit, (408)244-6826. or (415)854-7219.

Kay+Fun Peninsula Computer Club. Meetings: 2nd Thursdays, 7:30 pm. Social Room, 222 Laurel St., San Carlos. CP/M + DOS library. BBS: (415)572-8219. Call: 593-9981.

Lotus SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Jerry Stern, (415)282-4100.

Marin-Sonoma PC Users Group (MSPCUG). Meetings: Last Tuesdays, Guzman Hall, Dominican College, Grand Avenue., San Rafael. Call: (415)491-HAWK.

Mid-Peninsula IBM-Club. For IBM employees only. Call Scott Maiden for info: (415)855-4509.

Modula-2 SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm, Call: Richard Lesnick, (415)398-3587.

MS Word SIG/SFPCUG, 3rd Mondays, 6:30 pm, Chancellor's Conference Room, UCSF, 3333 California St., SF. Vic Saravia (415)929-1993.

NewViews SIG/SFPCUG. Meetings: 4th Mondays, 7 pm, 179 Parnassus Ave., SF. Call: G. Watson, (415)398-3587.

OtherPerfect SIG/SFPCUG. Meetings: 2nd Mondays, 7 pm, Kam's Restaurant, 2068 Center St., Berkeley. Call: Quisty Quinn, (415)644-1855.

PC Clubhouse. Meetings: 1st Fridays, 8 pm, Cal State Hayward, Rm. 2078, Heiklejohn Hall. 2000 disk public library, expert help, software/hardware demos, $24/yr. Call: (415)538-2449 or 846-3575.

PC UNIX SIG. Meetings: 1st Wednesdays, 7 pm, AT&T Training Center, 1090 E. Duane Ave., Sunnyvale. Learn more about such UNIX versions as Microport, XENIX and Minix. Starting a library of public domain source code. Call: Dan Kionka, (408)432-1300.

Sacramento PC User Group. Meetings: For information call Jackie Janssen at (916)383-6900.

San Francisco Computer Society. Meetings: 1st Mon., 7:00 pm. Laguna Honda School Conference Room (first Floor), 1350 7th Avenue, San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call: Ralph Gallagher, 929-0252.

San Francisco PC Users Group. Meetings: 3rd Mondays, 7:30 pm, Auditorium, UCSF, Laurel Heights, 3333 California St., SF. Call: (415)221-9166. BBS: (415)621-2609.

San Francisco PCjr Users Group (SFPCjrUG). Meetings: First Sundays, 7:30 pm, Rm. C205, Fort Mason Center, San Francisco. Demonstrations and discussions, club library, disks for sale. Call: John King, 472-7035.

Santa Cruz Computer Society. Meetings: 3rd Thursdays. 7 pm, Santa Cruz County Office of Education, 809

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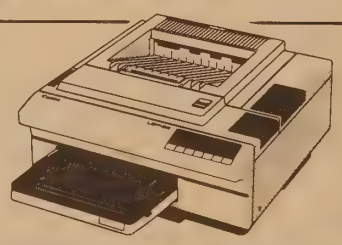

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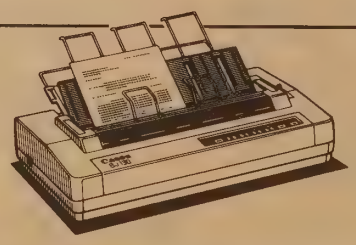

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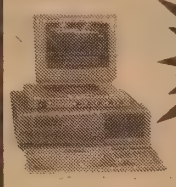

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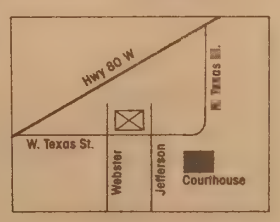

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Silicon Valley FOG. Meetings: 3rd. Wed., 7:30 pm, Saratoga Community Library, 13650 Saratoga Ave.

Solano Community PC Users Group. Meetings: 3rd Monday, 7 pm, Fairfield High School.

Solomon User Group Of Silicon Valley. Meetings: Wednesday, August 10, 6:30 pm, Conveyor And Storage Dynamics, 2581 Leghorn St., Mt. View. Call Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark, CA 94560; (415)659-1515.

South Bay AT&T PC UG. Meetings: Call for info. Call: (408)226-0116.

South Bay WordPerfect User Group. Meetings: Monthly, 13650 Saratoga Ave., Saratoga. Call: Martin Van Derpool, (408)238-8434.

South County PC Users Group. Meetings: Round Table Pizza Restaurant, 22457 Foothill Blvd., Hayward. Call: R.A. McCloud, (415)537-9899.

Teachers SIG/SFPCUG. Meetings: 3rd Mondays, 7:30 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Margaret Gwathmey, (415)982-4221.

TRS Nybblers. Meetings: 2nd Friday, 8 pm, Chabot College, 2555 Hesperian Blvd., Rm. 600, Hayward. MS/DOS, CP/M, laptops, CoCo's, Mod 1, 3, 4; Mod 2, 12, 16, 6000. PD software education modules, problem-solving committee.

Valley Computer Club IBM PC Users Group. Meetings: 3rd Wed., 6 pm, Xerox Bldg. 475 Oakmead Pky, Sunnyvale, CA. $24/yr member. Monthly VPUG News, access rights to VPUG-SIG Advice on desktop pub. techniques, new products, bugs, etc.

WordPerfect SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Debbie Foster, (415)285-4534.

INMAGIC

San Francisco INMAGIC User Group. INMAGIC Meetings: Monthly. Call for dates and times. Call: Dana C. Ellingen, 423-4582.

KAYPRO

BAKUP. Meetings: 3rd Tuesdays, 7:30 pm, Albany Senior Center, 846 Masonic Ave., Albany. Call: Bob Athey, (415)526-3541.

Kay+Fun Peninsula Computer Club. Meetings: 7:30 pm, Social Room, 222 Laurel St., San Carlos. CP/M + DOS library. BBS: (415)572-8219. Call: 593-9981.

San Francisco Computer Society. Meetings: 1st Monday, 7:00 pm, Homestead S&L, 5757 Geary Blvd., San Francisco CP\M and DOS machines. No BBS. Call: Ralph Gallagher, (415)929-0252 for information.

LAPTOPS

Bay HPX, Laptops, and Handhelds. Meetings: 2nd Saturdays. Call: Jim Horn, (707)794-3130 or Michael Felsenstein, (415)564-8279.

MACINTOSH

A32, The Association Of Apple 32 Users. Meetings: 2nd Saturdays, GTE cafeteria, Mountain View. Membership includes monthly meetings, access to Disk of the Month, full BBS priviledges, the ICON newsletter, SIGs, discounts, and much more. Call: 263-0398.

APX, Inc. Macintosh. A national intercorporate computer users information service with several communications channels including an electronic forum on MacNet, newsletters, and local and national meetings and special panels. Several local chapters exist, you can start one too. Call: (408)745-0665, or write to: Mike Bailey, APX, 370 Altair, PO Box 175, Sunnyvale, CA 94086.

Bay Area MacForum. Meetings: 3rd Saturdays, noon, Daly City Library, 40 Wembeley. BBS, SIGS, PD/SW library, Help List, Newsletter, Newcomers Meeting, more. Call: (415)771-5830/398-2335.

Berkeley Macintosh User Group (BMUG). Meetings: every Thurs., 6 pm, Physical Sciences Lecture Hall, UC Berkeley Campus. SIG meetings on Mondays, Tuesdays & Wednesdays. Call for this week's topic. (415) 849-9114. BMUG, 1442A Walnut St., #62, Berkeley, CA 94709.

Christian Macintosh User Group, San Francisco Chapter. Meetings: 2nd Thurs., San Francisco. Newsletter and support available. Contact Rick Thrasher at (408)437-1913. Bible Study and DTP SIGS.

Christian Macintosh User Group, Silicon Valley Chapter. Meetings: 1st Thurs., San Jose. Newsletter and support available. Contact Rick Thrasher at (408)437-1913.

Desktop Publishing SIG/GMUG. Meetings: 1st Tuesdays, 7 pm, San Francisco Business Times Building, 325 Fifth St., San Francisco. Call: 641-GMUG.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri., 7 pm, Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

EBMUG (East Bay Macintosh Users Group). Meetings: 3rd Tuesdays, 7:30 pm, 724 Allston Way (@ 4th) near University Ave., Berkeley. Members receive free PD software. Bring blank disk. Meetings open to everyone. Call: Terry Pennington, (415)486-0147.

GMUG (San Francisco's Macintosh User Group for Gays and Lesbians). Meetings: 3rd Wednesdays, 7:30 pm. Call: 641-GMUG.

HyperCard SIG/GMUG. Meetings: 7 pm, 78-A Mars St., San Francisco. Call: 641-GMUG.

Mac Diablo Users Group (MDUG). Meetings: 3rd Tues., Community Room, Glendale Federal Savings, 3101 Crow Canyon Road, San Ramon.

MacCruisers—Santa Cruz. Meetings: 2nd Wed., Jade Street Community Ctr. at 45th Ave., Capitola, CA.

Macintosh SIG/SEF. Meetings: 7 pm, 2nd Tuesdays, Apple Cafeteria. Call for dates and time. Tony Meadow, (415)644-9400.

Macintosh Users Of ComputerWare (MUCoW). Meetings: 2nd & 4th Wednesdays, 7:00 pm, Above ComputerWare store, 490 California Ave., Palo Alto. Call: (415)496-1051 or 496-1033.

MacNexus—Sacramento's Macintosh Users Group. Annual dues, $30, includes monthly newsletter. Contact: MacNexus, PO Box 163058, Sacramento, CA 95816; (916)448-6481.

Macs Of Marin (MOM). Meetings: 2nd Thursdays, 7 pm, Redwood High School, 395 Doherty, Larkspur. Call: Steve Salzman, 459-5707.

Silicon Valley Computer Society's Macintosh SIG. First meeting: September 21, 7:30 pm, 6th floor offices of Arthur Young and Co., Mitsubishi/Plaza Bank Building, 55 Almaden Blvd., San Jose. A forum for shared ideas. First meeting will be a demonstration of HyperCard. Other demos are planned for future meetings. Call: Dennis Dawson, (408)947-5550.

Stanford Macintosh Users' Group (SMUG). Stanford community membership: $25; public membership: $35 per year. Call: 723-SMUG. BBS: (415) 723-7685.

TI-West. Meetings: 2nd Fri., 8 pm, Chabot College, Rm. 600, 25555 Hesperian Blvd., Hayward, CA. Access to a variety of pub. domain software, education modules "problem solving" peripheral committee.

Tri-Valley Macintosh User's Group (TMUG). Meetings: 1st Thursdays, 7 pm, 4695 Chabot Dr., Rm 114, Hacienda Business Park, Pleasanton. Newsletter, large P/D library. Call: James, (415)426-8756 eves, Mike, (415)838-6165.

MICROSOFT

Mac Diablo Users Group (MDUG). Meetings: 3rd Tuesday, 7:30 pm, Community Room, Glendale Federal Savings, 3101 E. Crow Canyon Rd., San Ramon. Small, helpful group.

Microsoft Word Users Group. Meetings: 4th Mondays, 7:30 pm-9:30 pm, Hewlett-Packard Cupertino, Oak Room Bldg., 48 Pruneridge, 100 yds. east of Wolfe off Hwy 280. August 22: Chris Donner, Pres. Access Softek on DRAGNET for Text Retrieval and Management. Call: Bill West, (408)356-8805.

Mirosoft Word SIG of the SVCS. Contact Bill West, (408)356-8805.

MINDSET

San Francisco Mindset Users Group. Call: (408)270-0251.

MORROW

BAMDUA (Bay Area Micro Decision Users Assoc.). Meetings: 3rd Tues., 7:30 pm, Albany Senior Center, 846 Masonic Street (just north of Solano) in Albany, CA. Voice: (415) 534-4257. BBS: (415) 654-3882. P.O. Box 5152 Berkeley, CA 94705.

San Francisco Computer Society. Meetings: 1st Mon., 7:00 pm. Homestead S&L, 5757 Geary Blvd., San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call: Ralph Gallagher, 929-0252.

NEC

Bay Area NEC/100 Users Group. Meetings: 2nd and 4th Wednesdays. Locations vary. For those interested in laptops, especially Kyocera 80C85 type (NEC 8201a, Radio Shack Model 100 or 102). Call: (415)658-1889.

NOVELL

Novell Users Group. Meetings: Third Wednesdays, 6:30 pm, Coco's restaurant, 1305 South Mary, Sunnyvale. Newsletter, bulletin board, product demos, assistance for beginners. Call: Bill Strouse, (408)453-3321 days; modem, 24 hrs: (408)453-3326.

ORACLE

Northern California Oracle UG. Meetings: Call (408)738-8330 for info. Meets every 3 months at different Bay Area locations. Newsletter published between meetings.

OSBORNE

San Francisco Computer Society. Meetings: 1st Monday, 7:00 pm, Homestead S&L, 5757 Geary Blvd., San Francisco. CP\M and DOS machines. No BBS. Call: Ralph Gallagher, (415)929-0252 for information.

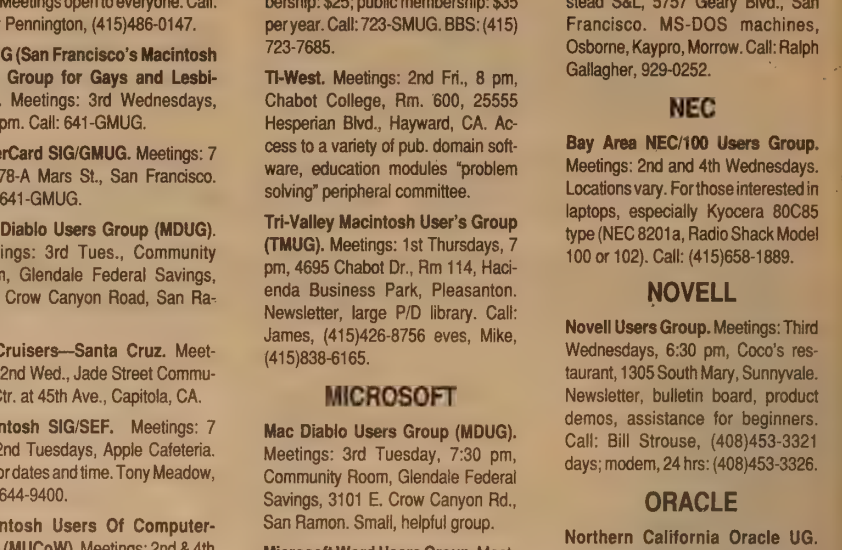
PARADOX

Silicon Valley Paradox Users Group. Meetings: 3rd Tuesdays, except December. For information, call: Emily Alford, (408)285-0348, or LaTulipe at (408)646-0297.

PROGRAMMING LANGUAGES

APL Bay Area Users' Group. Meetings: 2nd Monday, 6:30 pm, I.P. Asso-

No Other Magazines Were Mentioned!



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- 640 X 480 resolution at VGA mode
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- 640 X 400 resolution at CGA mode
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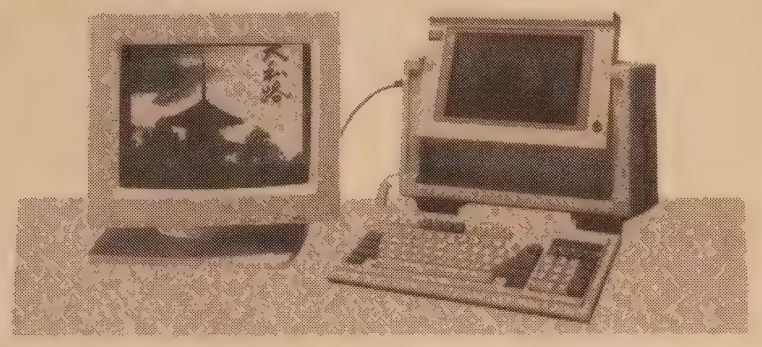

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C Language SIG/SFPCUG. Meetings: 2nd Mondays, 6:30 pm, Kam's Restaurant 2068 Center St., Berkeley. Call: Debee Norling, (415)644-1855.

CC County Programmers Group. For info write: 3115 Elizabeth Lane, Antioch, CA 94509.

Forth Interest Group of Silicon Valley. Meetings: 4th Sat., 1 pm, Oak Room, at Hewlett-Packard, on Pruneridge in Cupertino. Call George Shaw at (415)276-5953 for info.

Forth Interest Group, North Bay Chapter. Meetings: 2nd Sat., 1 to 5 pm, South Berkeley Community Library, corner of Russell and Martin Luther King Junior Way. One block north of Ashby BART station. Contact George Shaw, (415)276-5953.

Modula-2 SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm. Call: Richard Lesnick, (415)398-3587.

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SEF OOP SIG. Meeting: Third Tues., 7 pm, Parc Place Systems, 2400 Geng Rd., Palo Alto. Call: Dean Ritz, (415)691-6727 or (415)854-7219.

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R:BASE User Group Of The Redwoods. Meetings: Third Wednesdays, 3 pm, Sonoma/Marin County rotating meeting places. Call: Jim Ray, (707)886-5315.

Northern California User Group. Meetings: Every 3 months. For schedule, call: Ken Lebeiko, 881-2652.

Peninsula User Group. Meetings: First Wednesdays. For location and time, call: Don Whitecar, 592-5033.

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Bay Area Revelation UG. Meetings: 1st Tues. Call: (415)759-1210.

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San Francisco Solomon III Users Group. Meetings: last Wed., odd months 6-9 pm, Price Waterhouse, 555 California St. 36th fl., San Francisco. Annual membership - $50; corp. membership - $75.

Solomon User Group of Silicon Valley. Meetings: For info contact Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark, CA 94560.

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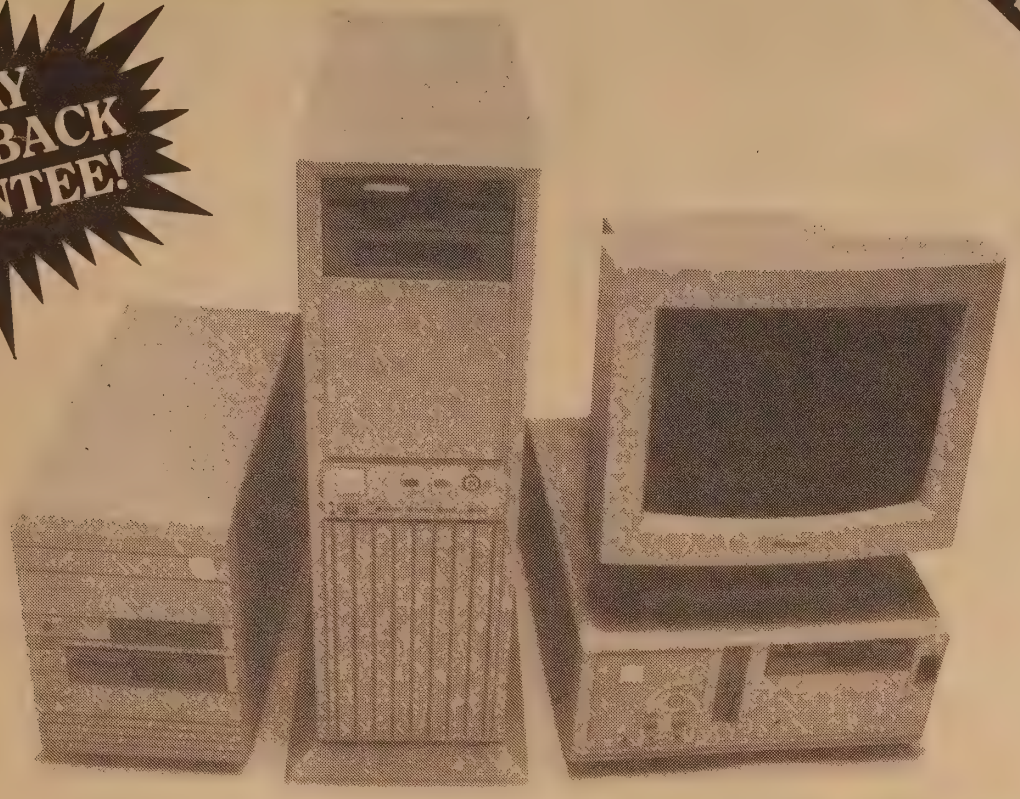

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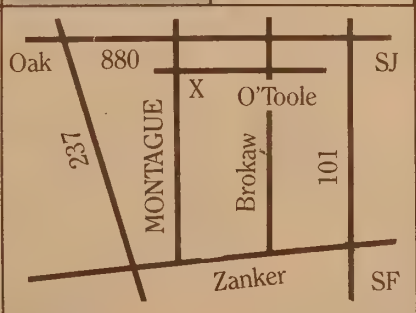

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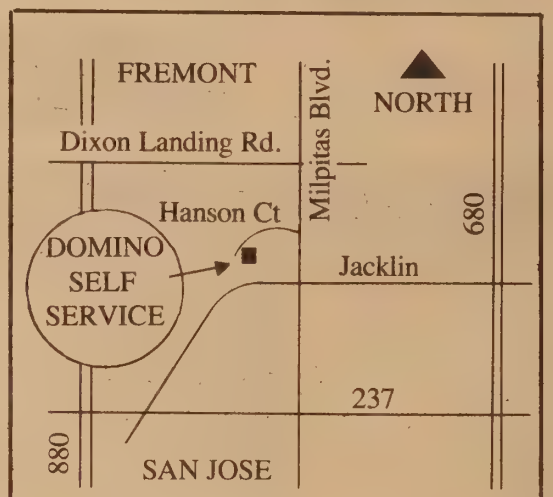

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Brea 99'ers Users Group. Meetings: 1st Mon., 7:30 pm, Mercury Savings, La Habra, CA.

San Francisco 99ers. Meetings: 3rd Saturdays, 3751 Elston Ave. Call: Fred, (415)530-8335.

Thousand Oaks Personal Computer Club (TOPCC). Meetings: monthly. Call: (714)686-0336.

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Timex Sinclair East Bay Z80 Users Group (TSEBZUG). Russ English, (415)465-3116.

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Timex/Sinclair Users of Silicon Valley (GUTS/SV). Meetings: each Sat., 9 am, Stanford Univ., Jordan Hall (quadrangle), Math Bldg. RM 380C. SW library & newsletter. For topic check PDSE BBS in Sunnyvale (408)735-7390, 300/1200, 8-N-1, 24 hrs.

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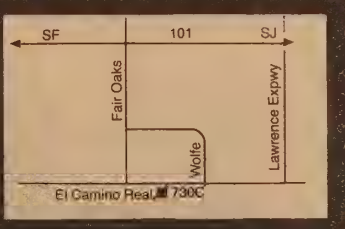

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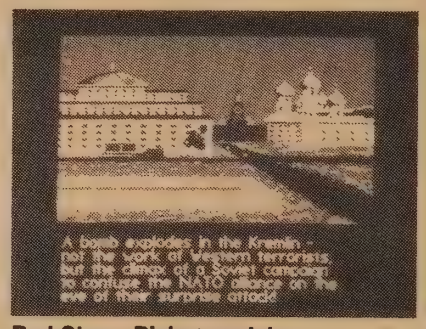
Top Ten Computer Games *continued from page 172*

In *Arkanoid*, the paddle becomes a spacecraft, the ball is an energy bolt, and some of the bricks are indestructible, while others release various kinds of power capsules when hit. Add a series of screens of increasingly fiendish difficulty, and (in *Arkanoid II*) a construction set to make your own screens, and you have one of the most addictive entertainments you can buy without a prescription. Outrageously good graphics and animation effects account for most of the charm of *Arkanoid*.

6. Best Military-Historical Simulation

Red Storm Rising
MicroProse
IBM PC version reviewed

I was going to put this one in the Flight Simulator category, but submarines don't fly. They can sure get into some wild dogfights, though. I know that Tom Clancy's techno-macho-militarist fantasies don't qualify as "history" either, but anyone who loves historical simulations will love Sid Meier's richly detailed model of submarine combat in the near future. The game flows smoothly between strategic (large scale) and tactical (small scale) modes, and the displays and controls are intense but not overwhelming. Excellent documentation.



Red Storm Rising models submarine combat.

7. Best Flight Simulation *(a split decision)*

Battle Hawks, 1942
Electronic Arts
IBM PC version reviewed

Chuck Yeager's Advanced Flight Simulator
Electronic Arts
Apple II version reviewed

Most flight simulators are too difficult to master, because the combination of a keyboard and a joystick is not a very good substitute for a control yoke, rudder pedals and a bank of properly labeled switches. And with half the screen taken up by gauges, the low resolution of most personal computer monitors provides a pathetically poor excuse for the three-dimensionality of the view from a cockpit.

Battle Hawks is LucasFilm Games' simulation of the carrier air battles of World War II in the Pacific. In CGA mode the graphics are disappointing, but with a VGA monitor and a fast CPU, this game is superb. The manual is an excellent job of historical research and explanation.

Air Force general Chuck Yeager is a legendary test pilot, and he actually participated in the design of the program that carries his name. The simulator lets you choose among a dozen historical and imaginary fighter aircraft (all with the same controls). Unlike combat-oriented simulations, this program actually attempts to model what a test pilot really does—exploring the performance envelope of an aircraft. Too ambitious for an 8-bit processor, Chuck Yeager's *Advanced Flight Simulator* should sparkle on 16- and 32-bit systems.

8. Best Educational Game For Kids

Making this a separate category is not intended to disparage the learning value of other kinds of games, or computer activities. "Educational Game" as used here, means a program that is marketed primarily to schools or to parents of young computer users. There is so much excellence in this area that a split decision was unavoidable:

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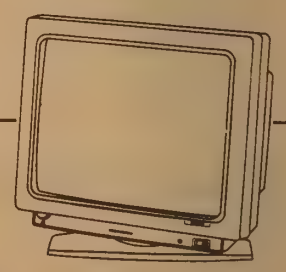

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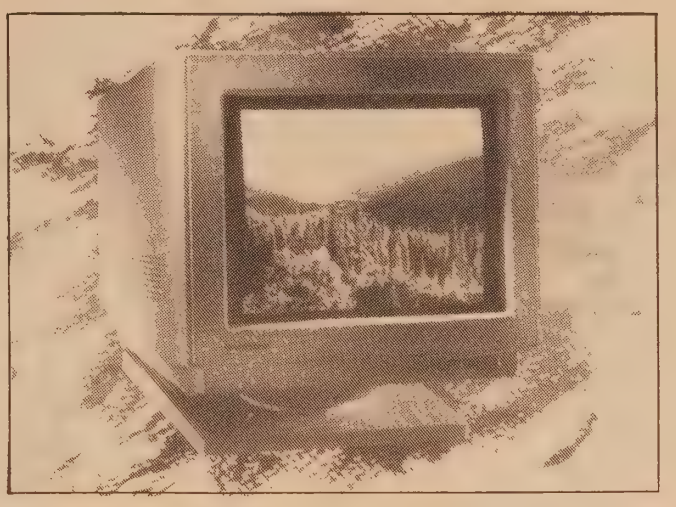

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Where In Time Is Carmen Sandiego?
Brøderbund
(Apple II, IBM PC)
Carmen Sandiego is the ruthless leader of a gang of jewel thieves who roam the world stealing national treasures. Your job is to track them down, by following clues that painlessly teach basic facts of geography. Two earlier games (*Where In The World Is Carmen Sandiego?* and *Where In The USA Is Carmen Sandiego?*) have been wildly successful with teachers and students at many different grade levels.

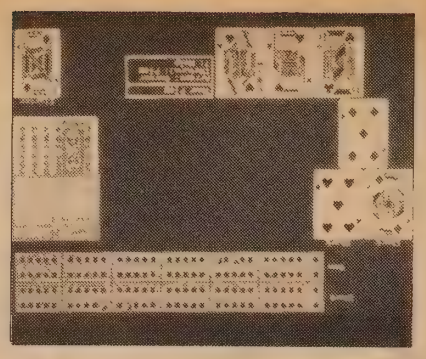
In this latest installment, the gang has stolen a time machine, and you have to find them, somewhere between 400 AD and the recent past, by following clues that painlessly teach basic facts of world history. Excellent documentation (have you noticed how often this is true for excellent games?) When Carmen's gang steals a spaceship, can we look forward to *Where In The Universe...?*

Math Rabbit
The Learning Company
(Apple II, IBM, Macintosh)
Everything that the Learning Company does is first-rate. These four little games are smoothly executed and soundly based on theories of learning. There is a musical counting game, a game that requires matching numbers to sets of objects, a fixed-increment addition/subtraction game, and a memory matching game that resembles the old TV show *Concentration*. The digitized voice and sound effects can be turned off, to avoid disturbing neighbors. *Math Rabbit* is intended for ages 4-7, but some parents report good results with even younger kids. Nothing in education is more important than building math thinking skills, and nothing in American schools seems to be a bigger failure. Computers, even with the best software, are only a small part of the solution, alas.

***Math Rabbit* helps kids learn number skills.**

9. Best Implementation Of A Classic

This category includes computer versions of classic board games, card games, or games of chance.



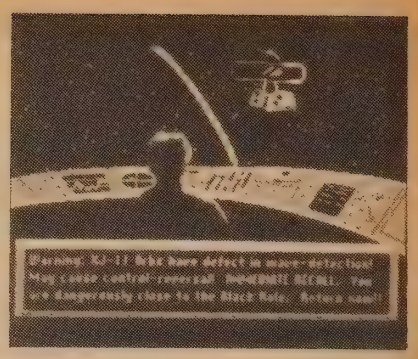
***Gin King/Cribbage King* uses AI to play cards.**

Gin King/Cribbage King
Software Toolworks
(IBM PC, 384K, VGA, EGA, CGA or Hercules)
Two popular card games for the price of one. Mouse or Keyboard. Seven different computer opponents with different "personalities." Beautiful color graphics. On-line help.

For me, most card games are a little too abstract, and the notion of playing cards against a computer seems a little perverse. But this package is a good example of the current state of the art in the application of artificial intelligence methods to entertainment.

10. Best New Idea

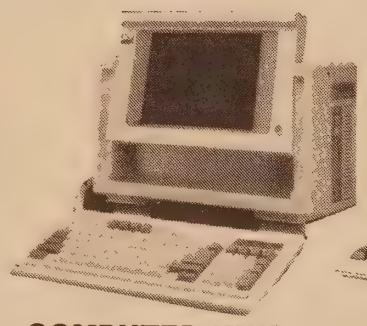
The Black Hole
Software Toolworks
IBM PC version reviewed



The Black Hole uses 3 -D technology.

3D goggles are actually an old idea. They did not do so well in movies, were even worse for television, and do quite poorly on computer monitors. Nevertheless, it was worth a try, and with continuing encouragement, this old technology could be improved.

Software Toolworks has developed an impressive new 3-D technology ("Grenovision"—named after project director David Grenewetzki) using polarizing goggles and something called the Pulfrich effect. So far, I haven't gotten past the first screen (which resembles our old friend "Brick Out"), but the documentation says there are 35 levels of puzzles, involving simple mouse, joystick, or keyboard control of a moving "orb." The package includes a booklet on the "History and Lore of 3-D." ■



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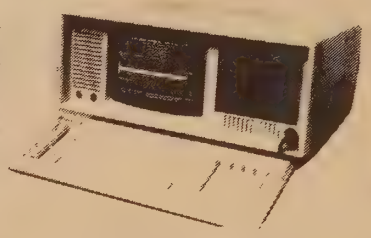

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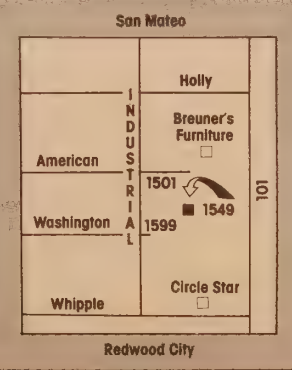

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And once again, we need your help, because, bombarded as we are by press releases, media events, and the like, we aren't always in a position to know about wizards behind the scenes, personal tales of extraordinary achievement, and insufficiently sung heroes. So if there's someone you think should be on this list, do not rely on our highly inadequate powers of telepathy—use this form to fax or mail us your suggestions, or send them to us at any of our various electronic addresses: **microx** on **The WELL** (415/332-4335), **MICROTIMES** on **MacNET**, or **{pacbell, hplabs, ucbvax, apple}!well!microx** on uucp.

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—MicroTimes Editors

Who? (Name of the person who should be on the list)

_____

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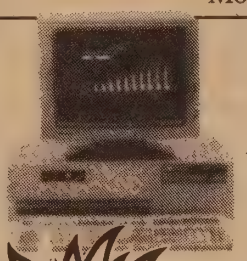

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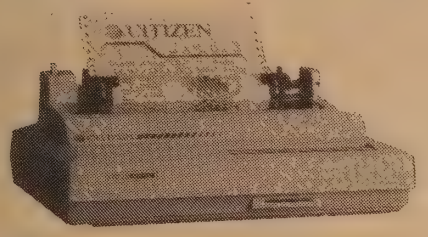

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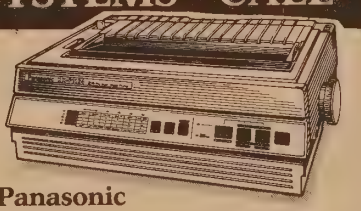

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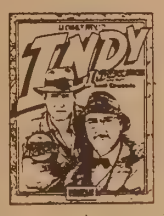

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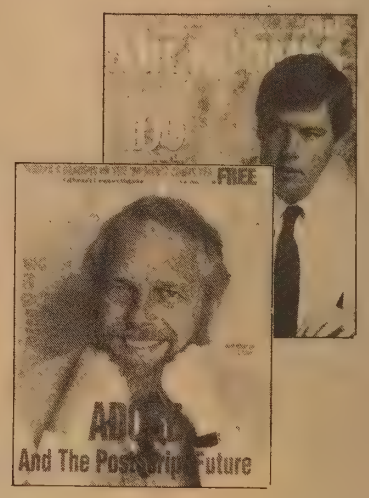

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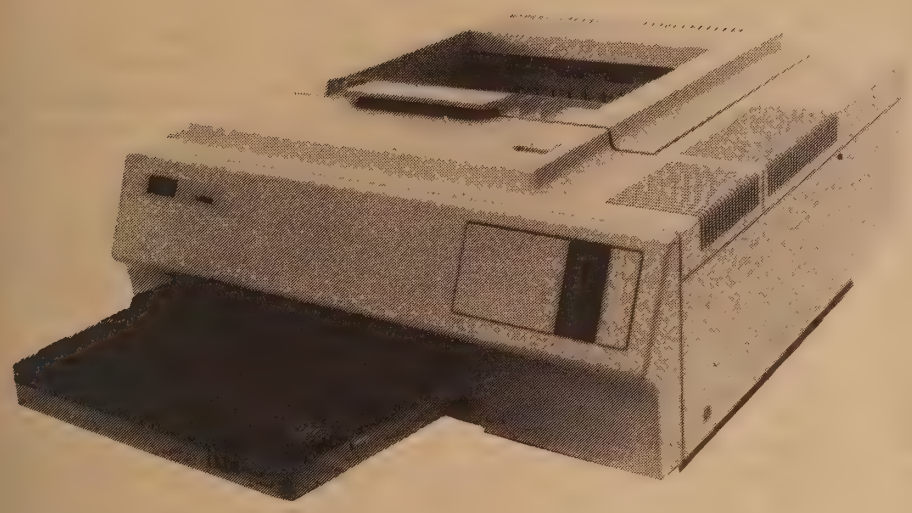

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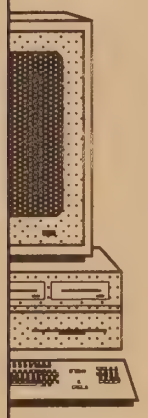

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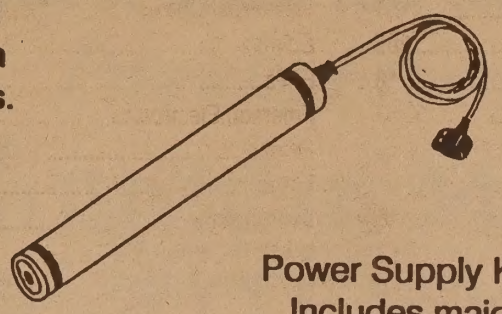

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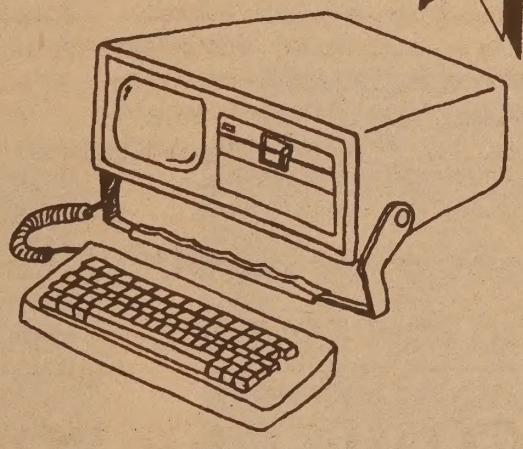

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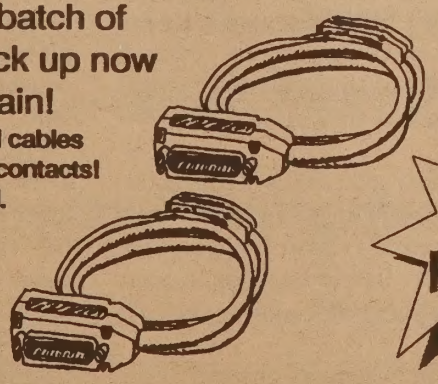

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Sure, This Is A Massive Plug For Dvorak's Guide To PC Telecommunications, But Read It Anyway

I've wanted to do a definitive book on telecommunications for about five years—telecommunications being at once the most ignored and one of the most important uses of personal computers. If your machine can't communicate with other machines, with large databases and with electronic mail systems, its usefulness has been severely limited.

A decade ago, industry observers always cited the big four applications for microcomputers: spreadsheets, word processing, database management and telecommunications. Three or four years ago this changed. Suddenly desktop publishing, networks, and even games became important categories, and telecomm was dropped from the big four. Its importance had not changed; it's just that people involved in the telecommunications scene were not vocal. They were having too much fun exploring online databases or fooling around in the BBS scene. There are over 30,000 BBSes in this country, and dozens of vendors who do nothing else but design and support BBS software. Yet we hear little of this not-so-underground activity in the computer press.

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This is, I think, because telecommunications is somewhat mature and almost stagnant. By "stagnant" I mean that there have been no wild breakthroughs in the scene, insofar as software is concerned. There isn't much difference between one telecomm program and another except for some interface issues. You still need to plug in parameters and dialing information. Once connected, you're hooked to another machine and that's that.

Unfortunately this low profile achieved by the telecomm scene has resulted in millions and millions of newcomers arriving on the scene without a clue about telecommunications. These newcomers seldom understand the importance of telecommunication and modems. And nobody is encouraging discovery. Hence *Dvorak's Guide to PC Telecommunications*.

Here comes the Catch-22. I, at first, wanted to sell such a guide to one of the big New York Publishing Houses, who are always begging for some book or other from me and every other technology writer in the world.

They wanted "some" book, but not this one. Why? One publisher told me that she thought modems were dead. "Nobody uses them anymore." In fact, this was the general impression in New York, especially in the majority of publishing companies that still rely on typewriters for all their work. The thinking soon became, "We don't want to do a telecomm book because nobody else does them, so there must not be a demand." And there won't be a demand until someone does a book. But they won't do a book because there's no demand. It's exasperating.

I gave up on this project temporarily a few years back, knowing the longer it was put off, the bigger the potential market—since it was obvious that nobody was going to get such a book through this roadblock of naivete.

Early in 1989, I ran into Nick Anis, who had developed *Modem Tutor*, a nifty introduction to telecommunications on a disk. He wanted to know if I wanted to help him improve and then sell it with my name on it.

I figured it would be perfect to wrap a book around instead. The book I've always wanted to do. As we discussed these possibilities, I told Nick that we should bundle a complete telecommunications package too, and maybe some related utility software. Digging up these packages was Nick's forte and we managed to fill nearly five disks' worth of bundled software to go with the book. The programs were compressed; two disks were included with the book, and a third was made available though a mail-in coupon, since the size of the book precluded jamming it in there.

Most importantly, we included a custom version of a superb and overlooked Telecomm package called *Telix SE. Procomm*. Users will want a copy of this since it includes the incredible Zmodem protocol and can be configured to look and feel like *Procomm Plus*.

I gave the New Yorkers one chance at this book. Despite the fact that we were lining up hundreds of dollars' worth of software in a classic big book/disk combo pak, they weren't interested. "Gee, a good package, but is anyone doing telecomm anymore?" I was asked.

There are even funnier stories—one publisher didn't want to take on the book because, as my agent said, "Are you having some sort of battle with IBM? It scared 'em off." This, I suppose, was because I had written negatively about IBM in *PC Magazine*. Thus I was poison in the minds of these incredible characters. I never figured to sell too many copies to IBM anyway.

"No guts, no glory," I mumbled and decided that doing business in my back yard was probably a better idea. So I went to Osborne/McGraw-Hill and

I don't know of any New York publisher that is equipped to receive a manuscript over a modem.

we did a quick deal and they were thrilled. I was thrilled because I could go down the street and unify the sales pitch, talk to sales people, approve ad copy and do all sorts of little things (details, details, details) that I would never accomplish working with the publishing mills in New York. After all, I spend most of my time in California.

Furthermore, since the book was so loaded with software, I knew it had to be more aggressively sold into computer stores than old-time publishing companies were willing to do. Osborne/McGraw-Hill had a good sales crew, well-versed in selling into an Egghead or Businessland chain.

So what's the message or moral or point of this column except to plug the book? I think the point is that specialty book publishing is perhaps more like record producing than like tradition-bound book publishing. In other words, you don't need a powerhouse like Random House to make some money. Arthur Naiman makes a fortune publishing his own books, and Peachpit Press has made a fortune doing little projects. So I appreciate a publisher like Osborne/McGraw-Hill, since they can do a book like this one the way it should be done. Very few publishers can handle this screwy market for books such as this one—especially when it doubles as a software package. In New York, Bantam probably comes closest, but you have to go out of town to find publishers like Que or Microsoft Press to adequately address the market.

Since books such as this can make a ton of money for the publisher, you'd expect some changes to take place within the old publishing houses. MacMillan bought Que, so maybe that's a solution to the problem.

The problem goes deeper. I have an office in New York and know a lot of people in the publishing business. One fact is frightening: most of the publishing industry has not caught up with the computer revolution. They still use typewriters for everything! It's terrible, since one of the best uses for computers is for writing books and transmitting manuscripts. I don't know of any New York publisher that is equipped to receive a manuscript over a modem. This backwardness hurts the most when the sales force goes into the field and can't sell a book about modems and telecommunications stuffed with disks and coupons because they honestly don't understand what it's all about.

My recommendation to everyone. Buy some copies of *Dvorak's Guide to PC Telecommunications* and modernize. Hey, it's a great Christmas gift! (Every little bit helps.) ■

John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine *and* MacUser, *considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

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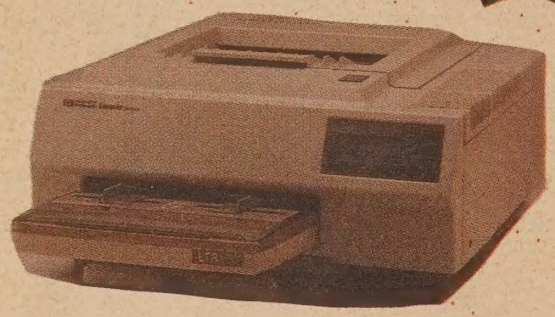

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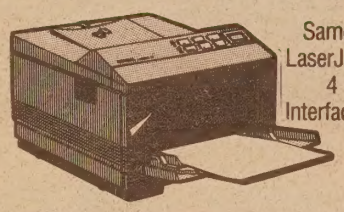

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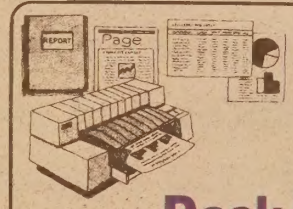

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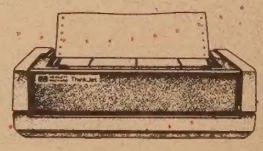

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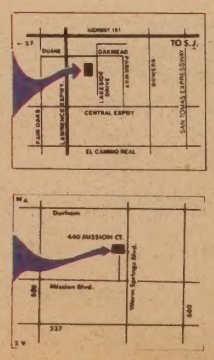

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